PB90-178013

Superfund Record of Decision (EPA Region 2): SMS Instruments, Deer Park, Suffolk County, New York (First Remedial Action), September 1989

(U.S.) Environmental Protection Agency, Washington, DC

29 Sep 89

U.S. Department of Commerce
National Technical Information Service
NTIS

50272-101

REPORT DOCUMENTATION PAGE

1. REPORT NO. EPA/ROD/R02-89/083

2.

3. Recipient's Accession No. PB90 178013/AS

4. Title and Subtitle
SUPERFUND RECORD OF DECISION
SMS Instruments (Deer Park), NY
First Remedial Action

5. Report Date 09/29/89

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Orgainization Name and Address

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

13. Type of Report & Period Covered
800/000

14

15. Supplementary Notes

16. Abstract (Limit: 200 words)

The 1.5-acre SMS Instruments site is in a light industrial and residential area of Deer Park, Suffolk County, New York. Since 1967 the site has been operated as an industrial facility which overhauls military aircraft components. Past waste disposal practices included discharging untreated wastewater from degreasing and other refurbishing operations to an underground leaching pool. In 1980 the site owner removed 800 gallons of VOC- and metal-contaminated wastewater from the pool, and subsequently filled it with sand and sealed all drain pipes. In 1981 the county required the site owner to leak test a 6,000 gallon underground storage tank (UST) used to store jet fuel. Because tests indicated leakage, the tank was emptied and, in 1988, was excavated and removed. This Record of Decision represents the first of two operable units at the site and addresses ground water and soil contamination. Source areas include the former UST area, the leaching pool, and spill areas where wastes were formerly stored in drums. A subsequent operable unit will investigate suspected sources of upgradient contamination. The primary contaminants of concern affecting the soil and ground water are VOCs including PCE, TCE, and xylenes; and metals including chromium and lead.

The selected remedial action for this site includes treating approximately 1,250 cubic yards of soil using in situ steam stripping or air stripping depending on the results of a planned treatability study; and ground water pumping and (Continued on next page)

17. Document Analysis a. Descriptors
Record of Decision - SMS Instruments (Deer Park), NY
First Remedial Action
Contaminated Media: soil, gw
Key Contaminants: VOCs (PCE, TCE, xylenes), metals (chromium, lead)

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report) None

20. Security Class (This Page) None

21. No. of Pages 102

22. Price A06

(See ANSI-Z39.18)

See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

PB90-178013

United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R02-89/083
September 1989

EPA

Superfund Record of Decision:

SMS Instruments, NY

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U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA. 22161

EPA/ROD/R02-89/083
SMS Instruments (Deer Park), NY

16. Abstract (Continued)

treatment using air stripping followed by reinjection through onsite wells. The contingency plan for soil remediation includes excavation and offsite incineration of contaminated soil. The estimated present worth cost for the selected remedial action is \$1,195,800, which includes an annual present worth O&M cost of \$437,576.

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

SMS Instruments, Deer Park, Suffolk County, New York

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the SMS Instruments site, chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act, 42 USC §9601, et seq., and, to the extent applicable, the National Contingency Plan, 40 CFR Part 300. This decision is based on the administrative record for the site. The attached index identifies the items that comprise the administrative record upon which the selection of the remedial action is based.

The State of New York concurs on the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health or the environment.

DESCRIPTION OF THE SELECTED REMEDY

This operable unit represents the first of two planned for the site. The remedy presented in this document addresses the treatment of the contaminated groundwater and soils at the SMS Instruments site. The second operable unit will investigate suspected sources of upgradient contamination.

The major components of the selected remedy include:

- In situ steam or air stripping of the contaminated soil, approximately 1250 cubic yards;
- Groundwater extraction, treatment and reinjection, to restore the aquifer to cleanup levels identified in the decision summary.

Treatability studies will be undertaken to confirm the effectiveness of the in situ steam stripping technology in treating the contaminated soils. If these studies indicate that the steam (or air) stripping of the soil is ineffective, a contingency remedy involving the removal and offsite incineration of the contaminated soil will be implemented.

STATUTORY DETERMINATIONS

Both the selected remedy and the contingency remedy are protective of human health and the environment and are cost-effective. The total remedial action, consisting of both this first operable unit and a future second operable unit, when fully completed will comply with Federal and State requirements that are legally applicable or relevant and appropriate. Both the selected remedy and the contingency remedy utilize permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfy the statutory preference for remedies that employ treatment that reduce toxicity, mobility, or volume as a principal element. Due to the existence of an upgradient source area, the selected remedy, by itself, will not meet chemical-specific ARARs or be capable of restoring the area ground water to applicable ground water quality standards until that upgradient source area is removed. The upgradient source area will be addressed as part of the second operable unit. Although the remedial action selected, the first operable unit, will not meet chemical-specific ARARs, it is only part of a total remedial action that will attain clean-up levels when fully completed. In the event the second operable unit fails to identify or control the source area, a waiver for technical impracticability will be sought.

The need for conducting a five-year review will be evaluated upon completion of the second operable unit.

William J

William J. Muszynski, P.E.
Acting Regional Administrator

9-29-89

Date

DECISION SUMMARY
SMS INSTRUMENTS, INC.
DEER PARK, NEW YORK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

NEW YORK

TABLE OF CONTENTS

SECTION

		Page
I.	Site Location and Description	1
II.	Site History and Enforcement Activities	1
III.	Highlights of Community Participation	3
IV.	Scope and Role of Operable Unit Within Site Strategy	4
V.	Site Characteristics	5
VI.	Summary of Site Risks	5
VII.	Description of Alternatives	6
VIII.	Summary of Comparative Analysis of Alternatives	12
IX.	Selected Remedy	17
X.	Statutory Determinations	18
XI.	Documentation of Significant Changes	21

ATTACHMENTS

Appendix I - Figures
Appendix II - Tables
Appendix III - Administrative Record Index
Appendix IV - NYSDEC Letter of Concurrence
Appendix V - Responsiveness Summary

SITE LOCATION AND DESCRIPTION

The SMS Instruments site is located at 120 Marcus Boulevard, Deer Park, in Suffolk County, New York, as shown in Figure 1. It is located in a light industrial and residential area of Deer Park and is an active industrial facility that consists of a 34,000 square-foot (ft^2) building on a 1.5-acre lot. About 90% of the lot is paved with asphalt. The immediate vicinity also includes more than 50 industrial facilities within a one-mile radius, and a large groundwater recharge basin located directly adjacent to the SMS Instruments site on the east side (see Figure 2). The site is located in the recharge zone of the Magothy aquifer, a sole-source aquifer for Long Island, which is the only source of drinking water for the surrounding residential population, estimated to be more than 124,000 persons.

All residents are supplied with public water and the use of private wells for potable water is not necessary at the present time. If any residents in the vicinity of the site choose to maintain private wells, it is believed that they do so for irrigation purposes and not as a source of drinking water. The nearest public well is located approximately one mile southwest and downgradient from the site.

Three sources of groundwater and soil contamination were found at the SMS Instruments site. The first major source is industrial waste generated from degreasing and other metal refurbishing operations. These wastes were routinely discharged to a leaching pool on the south side of the building. The leaching pool was pumped out, filled with sand, and sealed in 1983. The other source was a 6,000-gallon (gal) underground storage tank (UST) used for storage of jet fuel until 1981. The UST was removed from the site by SMS Instruments on February 17, 1988, during the Remedial Investigation (RI). Another source of surface soil contamination was documented from spillage and from leaking waste drums stored in the back lot of the property, east of the building.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Operations on the site started in early 1967 when Mr. Sol Schusheim rented the property from Marcus Associates of Farmingdale, New York. On September 21, 1973, Mr. Schusheim purchased SMS Instruments, Inc., from Ogden Technology and, later that year, purchased the property at 120 Marcus Boulevard in Deer Park. Mr. Schusheim still owns and operates the SMS Instruments facility.

The primary operation at the site has been the overhauling of military aircraft components. Overhauling operations include cleaning, painting, degreasing, refurbishing, metal machining, and testing. These operations required the generation, storage, and disposal of hazardous waste as well as the purchase, storage, and use of new chemical products. New chemical products are currently transported to the site by truck in 55-gal drums and stored outside in an enclosed area on the east side of the property. Several incidents of waste drum leakage were noted from 1976 to 1980 prior to construction of the enclosed drum storage area in 1981, according to Suffolk County Department of Health Services (SCDHS) inspection reports.

Until January 1980, wastewater from rinsing and painting operations within the building was discharged directly without treatment to the underground leaching pool on the south side of the property (see Figure 2). Samples collected from the leaching pool by SCDHS in 1979 and 1980 revealed the presence of several metals such as copper, chromium, lead, cadmium, silver, nickel and zinc, as well as the presence of aromatic hydrocarbons such as benzene (350 parts per billion (ppb)), toluene (3,200 ppb) and xylene (12,000 ppb). Halogenated aliphatic hydrocarbons such as 1,1,1-trichloroethane (2,380 ppb), trichloroethene (2,200 ppb), and methylene chloride (200 ppb) were also found.

In February, 1980 the New York State Department of Environmental Conservation (NYSDEC) required SMS to install five monitoring wells on the site, discontinue the outside storage of drummed waste, design an enclosed storage area and develop a hazardous waste management plan for NYSDEC approval.

In August 1980, SMS was again notified by the State to obtain a State Pollutant Discharge Elimination System (SPDES) permit for the wastewater discharge to the leaching pool.

In May 1980, Chemical Pollution Control, Inc., removed about 800 gallons of waste from the leaching pool, filled the pool with sand, and filled the discharge drains and pipes with concrete. Currently, wastewater is drummed for offsite disposal.

SCDHS issued a notice to SMS Instruments to leak test the 6,000-gallon UST. The test, performed in 1981, showed leakage, and SCDHS subsequently required the tank to be taken out of service. The UST was emptied of all liquids in 1981, and the tank was taken out of the ground in February, 1988.

The site was referred to EPA on October 1984 by the NYSDEC. SMS Instruments is the only identified Potentially Responsible Party (PRP). EPA sent an information request to the PRP on April 8, 1987. On June 8, 1987 a notice letter was sent to the PRP. The site was proposed for the National Priorities List (NPL) in October 1984 and finalized in June 1986. The remedial investigation and feasibility study (RI/FS) was initiated in May 1987, and the field work started in December of that year.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI/FS and Proposed Plan Remedial Action for the SMS Instruments site were released to the public on July 10, 1989 and July 14, 1989, respectively. These two documents were made available to the public in both the administrative record and an information repository maintained at the Deer Park, New York Library. A second information repository is maintained at the Babylon Town Hall. The notice of availability for these two documents was published in Newsday as well as in the Babylon Beach Beacon. A public comment period was held from July 10, 1989 to August 10, 1989. In addition, a public meeting was held on August 2, 1989. At this meeting representatives from EPA and the contractor Environmental Science and Engineering (ESE) answered questions about problems at the site and the remedial alternatives under consideration. A response to the comments received during the comment period is included in the Responsiveness Summary, which is a part of this Record of Decision (ROD). This decision document presents the selected remedial action for the SMS Instruments Site in Deer Park, New York, chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and, to the extent practicable, the National Contingency Plan (NCP). The decision for the site is based on the administrative record.

Public concern regarding the SMS Instruments site was highest in 1984 when the site was first nominated by the State of New York for inclusion on the NPL. Several local newspaper articles appeared in the spring of 1984 about the SMS Instruments site and other hazardous waste sites on Long Island that were proposed for the NPL. Community interviews were conducted about the same period. A public meeting was also held in December 1987.

SCOPE AND ROLE OF OPERABLE UNIT WITHIN SITE STRATEGY

This ROD addresses the first of two operable units planned for the site. It specifically addresses the major sources of contamination at the SMS Instruments site, the leaching pool, the UST area, and the drum storage area located at the vicinity of the drum storage shed (see Figure 2), as well as groundwater contamination attributable to the site. The major areas of soil contamination are considered collectively, since 1) the areas are within 60 feet of one another, 2) the major contaminants of concern in all areas are volatile organic compounds, and 3) the remedial alternatives addressing these areas are similar. The contaminated soil and groundwater at the site are addressed as one operable unit since the organic contamination is migrating directly from the unsaturated soil into groundwater which migrates to potential receptors offsite.

Since offsite contamination, upgradient of the SMS Instruments site, is suspected to be contributing to the groundwater contamination at the site, a second operable unit will be initiated to investigate those sources and alternatives for their remediation.

SITE CHARACTERISTICS

The results of the investigation conducted by EPA at the site are discussed in detail in the RI/FS documents. It describes the nature and extent of contaminants in onsite surface soils, subsurface soils, and in onsite and offsite groundwater. The highest concentration of contaminants was found in the leaching pool, underground storage tank, and in the drum storage area, as shown in Figure 2. As shown in Table I, for groundwater the most prevalent volatile organic chemical (VOC) was trichloroethene at a maximum concentration of 24,000 ppb.

This was the highest level of contamination found in the groundwater onsite. Other prevalent VOC's included xylenes (2,200 ppb), ethylbenzene (240 ppb) and chlorobenzene (670 ppb). Samples from upgradient offsite monitoring wells showed a maximum level of 14 ppb of trichloroethene (monitoring well location MW-09) and from downgradient offsite wells (monitoring well location MW-13) a maximum level of 60 ppb of trichloroethene. The upper glacial aquifer is classified IIb (federal classification) and GA (NYSDEC classification), i.e. a potential source of drinking water. The groundwater flow is in a southerly direction.

Table I shows also contamination levels found in surface as well as subsurface soil. The highest level detected was 1,200,000 ppb of xylene found in the subsurface soil near the leaching pool (sample location BH-16). Subsurface soil in the same vicinity showed a maximum level of contamination of 340,000 ppb of chlorobenzene. A high contaminant level of 10,000 ppb of volatile organics was found in subsurface soil samples in the vicinity of the underground tank storage area as well as a high of 1,000,000 ppb xylenes. A surface sample from the drum storage area showed a maximum level of 16,000 ppb of trichloroethene. All sample locations are shown in Figure 3. Locations of the offsite monitoring wells are shown in Figure 4. Contaminant levels detected in various media are shown in Table I. The surface and subsurface soil at the site is classified as a RCRA hazardous waste.

SUMMARY OF SITE RISKS

The results of the exposure and risk evaluations for the SMS Instruments site indicate a potential for adverse health impacts by the contaminants present only for the potable groundwater use scenario. Health risks associated with nonpotable use of groundwater for all current and future scenarios are below EPA acceptable levels. Table II presents a summary of carcinogenic risks and noncarcinogenic hazard levels for the SMS Instruments site.

Potential concern for noncarcinogenic effects of a single medium is expressed as the hazard quotient (HQ) - or the ratio of the estimated intake derived from the contaminant concentration in a given medium to the contaminant's reference dose. By adding the HQs for all contaminants within a medium or across all media to which a given population may reasonably be exposed, the Hazard Index (HI) can be generated. The HI provides a useful reference point for gauging the potential significance of multiple contaminants exposures within a single medium or across media. EPA considers an HI of one or more to be an unacceptable risk to human health.

Excess lifetime cancer risks are determined by multiplying the intake level by the cancer potency factor. These risks are generally expressed in scientific notation, (e.g. $1x10^{-6}$. An excess lifetime cancer risk of $1x10^{-6}$ indicates that, as a plausible upper bound, an individual has a one in a million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at a site. EPA has determined that a risk range of 10^{-4} to 10^{-7} is generally protective of human health. EPA also uses a risk level of 10^{-6} as a point of departure, i.e. a goal for site remediation.

Groundwater use from nonpotable private wells downgradient of SMS Instruments does not appear to pose unacceptable health risks under the exposure conditions considered and for the contaminants present. Carcinogenic risks resulting from occasionally drinking water, dermal contact with water, and consumption of vegetables irrigated with contaminated water are on the order of 10^{-7} to 10^{-9}, which is below the 10^{-6} point of departure risk level. The total noncarcinogenic health HIs are several orders of magnitude lower than unity and indicate the low potential for adverse health impacts. Table II summarizes these risk indicators.

Potential use of groundwater downgradient from SMS Instruments for a potable domestic water supply was evaluated in the risk analysis as a hypothetical scenario. While the presence of private wells has been documented, all residents potentially impacted by contaminated groundwater are assumed to be connected to public water supply wells. This pathway was developed to evaluate the threat to public health from this hypothetical use. Noncarcinogenic health HIs for potable use of groundwater are 6.86×10^{-1} and 8.55×10^{-1}, using measured and modeled data, respectively. However, estimated cancer risks of 2.27×10^{-5} and 1.34×10^{-5} were calculated for the measured and modeled data, respectively. The contaminants used to determine this were trans 1,2 dichloroethene, tetrachloroethene, and trichloroethene because they are among the most toxic components and, thus, represent the worst case scenario. These estimates indicate that potable use of groundwater may pose an unacceptable health risk to offsite residents. In addition, the measured and predicted exposure point concentrations of trans-1,2-dichloroethene, tetrachloroethene, and trichloroethene exceed the available applicable or relevant and appropriate requirements (ARARs), as shown in Table I, for drinking water use.

This evaluation suggests that some type of remedial action is warranted if residents in the affected area were to use water from private wells for potable purposes. Since the SMS site is located over a deep recharge zone, the potential for cross-contamination of the aquifer is very real. This suggests that action is necessary in order to protect residents from consumption of potable water from the Magothy Aquifer, which is the primary source of drinking water. Therefore, protective measures should be implemented.

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health or the environment.

DESCRIPTION OF ALTERNATIVES

Two media-specific remedial actions are required to protect human health and the environment because of the nature of contamination at the SMS Instruments site. Soil has been determined to be a source of contamination. Contaminants transfer from the unsaturated soil to groundwater. Once in the groundwater, the contaminants, under the influence of the groundwater gradient, migrate from the site to potential receptors.

Specific remedial action objectives for this site include:

Groundwater - Restoration of groundwater quality to its intended use (class IIb and GA-potential source of drinking water) by reducing contaminant levels below State and Federal drinking water standards where possible (See Table I). In the case where upgradient contributions prohibit such restoration for a particular compound, the contaminant level will be reduced to the upgradient level.

Soil - In order for the soil not to be a contributor to groundwater contamination, the degree to which the contaminants have to be reduced is different for each component. For the components of interest, however, the contaminants such as trichloroethylene, xylenes, tetrachloroethylene and 1,2 trans dichloroethylene have to be reduced below 10 ppb. These contaminants are considered to be the most mobile and most toxic.

The alternatives considered are presented below:

Migration Management

Alternative 1a: No Action (source untreated)
Alternative 1b: No Action (source treated)

Alternative 2a; Groundwater Extraction, Treatment and Discharge (source untreated)
Alternative 2b: Groundwater Extraction, Treatment and Reinjection (source treated)

Source Control

Alternative 3: No Action
Alternative 4a: Source Removal and Offsite Disposal
Alternative 4b: Source Removal and Offsite Incineration
Alternative 5: Low Temperature Soil Stripping
Alternative 6: In Situ Steam Treatment

The costs for the alternatives considered are shown in Table III.

Migration Management Alternatives

Two management of migration alternatives are discussed: a no action alternative and a groundwater treatment alternative. Since the source of contamination (i.e., soil) directly impacts the extent of contamination in the ground water, the actual implementation of these alternatives will vary depending on whether or not the source of contamination is remedied. Two areas of implementation that are significantly impacted are the location and means of discharging the treated groundwater, and the time required to remediate the groundwater (restoration time frame).

Therefore, the management of migration alternatives were evaluated under two scenarios, the first one (a) assumes that the source has not been remedied while the second one (b) assumes that the source has been remedied by any one of the source control remedies (alternatives 4-6).

Alternative 1a: No Action (source untreated)

The no-action alternative is required by the National Contingency Plan (NCP) to be considered through the detailed analysis. It provides a baseline for comparison of other alternatives.
No remedial action will be implemented under this alternative. A long-term monitoring program to provide information on the extent of contaminant migration over time will be conducted. Five wells will be monitored semiannually for volatiles, semivolatiles, and various metals. This action involves the implementation of institutional controls for water use restrictions to prevent the use of the contaminated groundwater as a potable water source. These controls would be imposed on any residences or businesses up to one-half mile downgradient of the site that may be potential receptors. A capital cost of $70,400 will be required and the annual operation and maintenance (O&M) cost will be $13,600. The periodic cost, which consists of monitoring and reviewing the performance of the unit and also evaluating the public health risk every five years, is evaluated at $7,500. The restoration time frame will be of a very long duration, probably more than 20 years.

Alternative 1b: No Action (source treated)

This alternative is the same as Alternative 1a, except that the source will be treated by one of the four alternatives, 4a, 4b, 5 or 6. This is significant in that the restoration time frame will be reduced by approximately 10 years.

Alternative 2a: Groundwater Extraction, Treatment, and Discharge (source untreated)

An extraction well will capture the plume of contaminated groundwater emanating from the SMS Instruments site. Using the average hydraulic conductivity obtained from slug tests performed during the RI, a pumping rate of 500 gpm was estimated to capture the contaminant plume. The approximate location of the extraction well is on the right-of-way of Commack Road, as shown in Figure 5. The location was selected based on the plot of the contaminant plume generated from the computer modeling conducted in the RI. The extracted groundwater will be conveyed under pressure via an underground pipe installed in the road right-of-way. The pressurized main consisting of an 8-inch polyvinyl chloride (PVC) pipe will deliver the groundwater to the treatment system at the location shown in Figure 6. A computer model was used to size an air stripping treatment system.

The conceptual design of this system is based upon representative concentrations of contaminants in the ground water as determined during the RI. Two air stripping towers handling 250 gpm each with packing depths of 15.5 ft were selected to reduce the influent concentrations of volatiles to less than the selected chemical-specific ARAR values listed in Table I and to include also surface water and State Pollutant Discharge Elimination System (SPDES) discharge requirements. The water from the air stripping system will then be filtered using multimedia deep bed filters to remove iron, as well as other suspended solids. Iron will be removed to meet action-specific ARARs for surface water discharge. The groundwater will then be discharged to surface water. The closest surface water is at Birchwood Park which is approximately one half mile southeast of the site. A schematic of an air stripper is shown in Figure 7. In addition, air emissions from the air stripper will be treated using a carbon system.

The capital cost for the project will be $544,100 and the annual O&M will be $128,200. A periodic cost of $7,500 will be also required. Residual filters will be treated as hazardous waste and will be disposed of accordingly. The estimated timeframe to restore the aquifer to action levels is 12 years.

Alternative 2b: Groundwater Extraction, Treatment and Reinjection (source treated)

This alternative is the same as alternative 2a, except that the source will be treated by one of the four alternatives: 4a, 4b, 5, or 6 and the groundwater will be reinjected through wells located onsite below NYS groundwater injection standards. The restoration time frame is thereby significantly reduced and is estimated to take 4 years. The costs for this alternative are $365,300 for capital cost, $123,400 for annual O&M and $7,500 for periodic costs.

Source Control Alternatives

Alternative 3: Source Control -- No Action

This no action alternative was developed for source control measures. Implementation of this alternative is achieved by incorporating monitoring and land use/deed restrictions on the site proper. The elements necessary for this implementation alternative are:

- Installation of monitoring wells,
- Obtaining land use and deed restrictions,
- Periodic sampling of groundwater from monitoring wells,
- Periodic subsurface soil sampling,
- Patching and sealing of asphalt pavement above source areas, and
- Five-year review of the site conditions.

Costs are approximately the same as alternative 1a.

Alternative 4a: Source Removal and Offsite Disposal

This alternative involves the excavation and offsite disposal of the contaminated soil present at the former leaching pool and UST areas. Approximately 1,250 cubic yards (yd^3) of soil, involving an area of 1700 square feet by 20 feet deep, contaminated with volatile and semivolatile organics will be excavated and then transported to an offsite RCRA-permitted landfill for disposal. The estimated quantity of soil requiring treatment will be refined during the remedial design and will include additional soil from the drum storage area. Action levels in the soil will be met by reducing the VOC contamination to 10 ppb. Prior to excavation of the contaminated soil, the existing pavement will be removed. The pavement would then be loaded into covered trucks and transported to a debris landfill for disposal. If necessary, the pavement will be decontaminated before being transported to an offsite RCRA-permitted landfill. It is also anticipated that a small quantity of soil will need to be excavated from the drum storage area.

If this remedy can be implemented prior to November 1990, no treatment of the soil will be required prior to disposal. However, after that date the soil must be treated before disposal to comply with the RCRA land disposal restriction. The capital cost for this alternative is $520,200 and the actual excavation work is expected to take approximately 30 days.

Alternative 4b: Source Removal and Offsite Incineration

This alternative involves the same excavation of contaminated soil described in Alternative 4a. Once the contaminated soil is excavated, it will be placed in fiber drums. Each fiber drum will be filled with approximately 300 lbs. of contaminated soil. The drums will be loaded onto trucks and transported to an offsite incinerator. For costing purposes, it is assumed that an incinerator in Bridgeport, Logan Township, New Jersey will be used. The excavated areas will be then filled with clean soil. The soil will be treated to comply with the land disposal strictons. The capital cost for this alternative is estimated to be $2,036,500 and the actual construction time is the same as alternative 4a (30 days).

Alternative 5: Low Temperature Soil Stripping

In this alternative, contaminated soil would be excavated according to the procedures previously outlined and then stockpiled in an area adjacent to the thermal treatment unit for feeding into a screen to remove oversize (+2 inch) material and debris. Screened material will then be transported by a conveyor to a hopper that directly feeds the thermal processor. After processing, the soil would be transferred by enclosed screw conveyors for use onsite as backfill. The vaporized contaminants could either be destroyed through a secondary high-temperature combuster or collected through condensate or adsorbed onto activated carbon. Stack emissions would be monitored to verify that they were in compliance with Federal and State regulations, including those for volatile organic compounds (VOCs), hydrogen chloride (HCL), carbon monoxide (CO) and particulates. Prior to returning the treated soil it must be tested using the Toxicity Characteristic Leaching Procedure (TCLP) to ensure that land disposal treatment levels are met. At this point in time, it cannot be determined whether these levels can be met. If levels cannot be met, a treatability variance may be required. Unless the material is delisted (i.e., certified as non-hazardous), the material would have to be covered in accordance with landfill closure requirements. Monitoring would also be required. A treatability study will be required for this alternative. Capital costs are estimated to be $629,800, and annual O&M at $14,100. Time required for onsite construction and treatment activities is less than 90 days.

Alternative 6: In Situ Steam Stripping

A typical *in situ* steam stripping system involves the introduction of steam into the contaminated soils followed by air and vapor extraction in a vacuum. In Figure 8, a typical schematic of an in situ stripping setup is shown. The injection wells and the extraction wells are separately manifolded. An air and steam mixture is introduced into the contaminated soil and a vacuum extraction pump provides the necessary pressure difference to insure the passage of the mixture through the soil. The condensate is separated from the vapor in a treatment unit and the air is further treated by means of a carbon filter. Spent carbon from the treatment unit, as well as the condensate, would be treated/disposed as hazardous waste. Due to the proximity of the locations of contaminated soil (UST, leaching pool and storage drum areas), one common aboveground injection system, extraction system, and vapor phase separation system will be used. After organic emissions rates have decreased to negligible levels, soil samples would be collected to confirm that soil contaminant-specific action levels have been met. Upon completion of the *in situ* steam stripping operations, all equipment would be decontaminated and removed from the site. Wastes generated during decontamination would be collected and transported to a licensed facility for treatment/disposal.

The condition of the soil at the SMS site (homogeneity, high porosity, absence of clays) lends itself ideally to steam stripping. A study at a superfund site in San Jose, California, conducted by the University of California at Berkeley, showed that the organics in the soil were reduced by as much as 99.3%, at a faster rate than air (alone) stripping. It is estimated that this procedure would reduce the contaminant levels in the soil by more than 99%. If this is the case, it will result in an average soil contaminant level of less than 10 ppb for all contaminants of concern. A treatability study will be conducted to establish different process variables such as steam and air ratio, temperatures and pressures, for a successful implementation of this alternative. It should be made clear that if any difficulties are encountered, the same equipment can be used to treat the soil with air only. The latter one, although innovative, is a proven technology and has been used with success during actual field remediation. The capital cost for this alternative is $353,200. The time required to construct and treat the contaminated soils is approximately five months. Using air only will result in a similar, but lower, capital cost but will require three to six months longer to complete the remediation.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The alternatives were evaluated based on the following nine criteria:

- Overall protection of human health and the environment;
- Compliance with all federal and state applicable or relevant and appropriate requirements (ARARs);
- Long-term effectiveness and permanence;
- Short-term effectiveness;
- Reduction of toxicity, mobility, or volume of contaminants;
- Implementability;
- Cost;
- Community acceptance; and,
- State acceptance.

A summary of the relative performance of the alternatives with respect to each of the nine criteria is provided in the next section.

1. Overall Protection of Human Health and the Environment

a) Migration Management

All Migration Management alternatives are considered to be protective over the long term; however, both groundwater extraction and treatment alternatives afford greater protection should the ground water ever be used for potable purposes. Alternative 2b provides the highest overall protection to human health and the environment in the shortest period of time (4 yrs.) versus no action which would require more than 20 years for action levels to be achieved through natural attenuation.

b) Source Control

All the source control alternatives are considered to be protective of human health and the environment. Alternatives 4a, 4b, 5, and 6, in that order, are considered protective since they remove and destroy the contaminants at the SMS Instruments site. Alternatives 4a, 4b, 5 and 6, in that order, are considered protective since they remove and destroy the contaminants at the SMS Instruments site. Alternatives 4a, 4b, and 6 would not require any long term maintenance or deed restrictions. Alternative 5 would require some monitoring and maintenance, as required under landfill closure. Alternative 3 does not provide any additional level of protection above that defined in the baseline risk assessment. This alternative would require that the level of protection be maintained by preventing future activities at the site, such as excavations, which may cause worker exposure.

2. Compliance with ARARs

a) Migration Management

None of the alternatives will achieve all chemical-specific ARARs for groundwater rated IIb, potential drinking water, unless off-site upgradient sources are removed. Although the selected remedial action for the first operable unit will not meet chemical-specific ARARs, it is only part of a total remedial action that will attain such clean-up levels when fully completed. A second operable unit will be conducted in an attempt to identify upgradient sources of contamination. In the event the second operable unit fails to identify or control upgradient sources, a waiver for technical impracticability (under SARA section 12(d)4(C)) will be sought.

Until the time that upgradient contributions can be treated, cleanup levels for trichloroethylene (TCE), 1,1 dichloroethane, trans 1,2 dichloroethane, and 1,1,1 trichloroethane will be set at the upgradient levels, as determined from additional monitoring to be conducted during the remedial design and/or remedial action. The treatment unit discharge will meet all ARARs. Air emissions from the air stripper will also be treated to meet all ARARs.

b) Source Control

There are no chemical-specific ARARs applicable for soils. All alternatives, except no action, will meet action specific ARARs if performed prior to November 1990. After that date only alternatives 4b and 6 will meet ARARs. Alternative 4a could not be implemented due to land disposal restrictions. Alternative 5 will require that treated soil be tested using Toxicity Characteristic Leaching Procedure (TCLP), prior to backfilling, to insure that land disposal levels are met. At this point in time, it cannot be determined whether these levels can be met. If levels cannot be met, a treatability variance may be required.

3. Long-Term Effectiveness

a) Migration Management

Alternative 2b, groundwater and source remediation, will provide the greatest protection to the community, since it removes and/or treats all contamination at the site. Alternative 2a is less effective, since it leaves the source untreated and would require land use restrictions onsite in order to be protective. Similarly, under alternatives 1a and 1b, if groundwater and land use restrictions are completely implemented and enforced, these alternatives will be effective in protecting public health and the environment, since no receptor or exposure points will exist. However, the upper aquifer will be restored only by natural attenuation, a process which will take over 20 years to reach action levels, according to results obtained from groundwater modeling.

b) Source Control.

Alternatives 4a, 4b, 5 and 6 remove contaminants from the site and do not leave any untreated waste. Alternatives 4a, 4b and 6 do not leave any residuals that require managing to ensure an adequate level of protection. Alternative 3, however, leaves the contaminants in place and requires management beyond the implementation phase to monitor the remaining level of risk, as well as maintenance of the asphalt cover. Alternative 5 would also require some post closure care to comply with landfill closure requirements.

4. Short-Term Effectiveness

a) Migration Management

Alternative 2b, groundwater and source remediation, will achieve action levels protection for the community in four years. Alternatives 2a wll take ten years to achieve action levels due to the lack of source control measures. Both alternatives create potentially new migration and exposure pathways by extracting groundwater, but the remedial treatment processes are considered to keep the risk of exposure below significant levels. Alternatives 1a and 1b, the no action alternatives, will take significantly longer, e.g., twenty years or more, to achieve action levels. There are no risks involved during implementation, since no action would be taken.

b) Source Control

Alternatives 4a, 4b, 5 and 6, the source removal/treatment alternatives, may potentially increase the risk to the community during their implementation because they extract contaminants and create new potential exposure routes not identified in the baseline risk assessment. Proper safety procedures and onsite monitoring, however, are expected to ensure that the community is not subjected to any significant risk from exposure to the contaminants. Alternative 6 will have the least negative impact on the community during implementation, since it will be conducted in situ. Similarly, alternative 5 will be conducted onsite and will have minimal impact on the outside community. The community will also be impacted to a minor degree by truck traffic. The truck traffic for Alternatives 4a and 4b has been estimated to be 10 trucks per day for approximately 20 days.

5. Reduction of Toxicity, Mobility, or Volume of Contaminants

a) Migration Management

Alternatives 2a and 2b, groundwater remediation, will reduce the toxicity of contaminated groundwater by removing the contaminants and adsorbing them on activated carbon. The mobility of contaminated groundwater will be reduced to the area influenced by the extraction well. In Alternative 2a, as well as Alternative 2b, the treatment unit will be provided with air controls to eliminate the migration of contaminants to the atmosphere even though the air emissions are expected to be minimal, less than 1 lb. per day. The filtered solids and the activated carbon in the treatment unit during remediation will be considered hazardous waste and disposed of accordingly.

Alternatives 1a and 1b, on the other hand, will not afford any reduction in the mobility, toxicity, or volume of contaminated groundwater.

b) Source Control

Alternative 4b, excavation and offsite incineration, will provide the greatest degree of destruction of contaminants and, therefore, the greatest degree of reduction of toxicity, mobility, and volume. Alternative 5 will provide the same or very close to the same reduction as Alternative 4b. Alternative 4b will produce ash that will require disposal. Alternative 6 will not provide as great a degree of contaminant destruction or reduction in contaminant mobility as alternatives 4b and 5. However, it is expected to provide an adequate degree of contaminant destruction and be protective of human health and the environment. Alternative 3 does nothing to reduce the mobility, toxicity, or volume of contaminants, and Alternative 4a merely transfers the problem elsewhere.

6. Implementability

a) Migration Management

All alternatives are technically feasible and relatively easy to implement; however, each alternative requires a different amount of time to construct or implement. Alternative 1a requires the least time to construct and implement, since only monitoring wells need to be installed. However, under alternative 1a, and, to a lesser extent, alternatives 2a and 1b, in that order, it will be difficult to enforce the administrative/institutional controls, such as restrictions on new private wells development. Similarly, alternatives 2a and 2b may present some implementation problems. For alternative 2a, the requisition of right-of-way and/or easement for the piping network needed for groundwater transport from the onsite treatment system to the discharge point may be particularly difficult and complicated. Both Alternatives 2a and 2b require installation of an offsite extraction well as well as a piping network connecting this well to the onsite treatment unit.

b) Source control

Of the source control alternatives, Alternatives 4a and 4b would require the least time to implement. Alternatives 3, 5 and 6 are considered to take relatively the same amount of time to construct and implement (i.e., 70 to 150 days). Alternative 6 has been implemented with success in a preliminary study conducted at a proposed Superfund Site near San Jose, California. It is a novel but very effective way for soil remediation and suited ideally for the soil present at SMS Instruments. Alternatives 5 and 6 would take more time to implement since both will require a treatability study. A potential difficulty for alternative 6 implementation may be the availability of the technology for this process since it is a novel technology. Should some difficulties arise, the same equipment can be used for air stripping the soil, which is a proven technology.

7. Cost

The present worth and capital costs for each alternative are shown in Table III.

8. Community Acceptance

The community supports the preferred alternative (Alternatives 2b and 6). Community comments can be reviewed in the public meeting transcript which is included in the administrative record. A

Responsiveness Summary which summarizes all comments received during the public comment period is attached to this document.

9. State Acceptance

The State of New York, through the New York State Department of Environmental Conservation (NYSDEC), concurs with the selected remedy.

THE SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the detailed analysis of alternatives, and public comments, both EPA and the State of New York have determined that a combination of Alternative 2b, Groundwater Extraction, Treatment and Reinjection, and Alternative 6, In Situ Steam Stripping of the Contaminated Soil, is the most appropriate remedy for the SMS Instruments Site in Deer Park, New York.

Approximately twelve hundred fifty (1250) cubic yards of contaminated soil will be treated by in situ steam stripping. VOCs will be removed by this treatment process to an average level of approximately 10 ppb. The actual VOC contaminant to be utilized as an indicator and the appropriate clean up concentration will be determined during the treatability study. The groundwater will be remediated by extraction, treatment and reinjection to meet either Federal or State drinking water levels except in those cases where the upgradient concentration are above such standards. In such a case, the contamination will be reduced to upgradient levels so as to eliminate any significant contribution from the SMS site. The treated groundwater will meet all State and Federal drinking water standards prior to reinjection. This is the most protective alternative in terms of the toxicity, mobility and volume reduction and for the permanence and long-term effectiveness they achieve. These techniques would permanently reduce the contaminants of concern at the site, such as volatile organic compounds in the soil as well as in the ground water. Groundwater remediation under this alternative can be expected in 4 years, as opposed to more than 20 years for the no-action alternative (1a) and 15 years and 10 years for Alternatives 2a and 1b, respectively.

The estimated cost for the selected remediation alternative (i.e., alternatives 2b and 6) is $1,195,800. A detailed cost summary of the selected remedy is shown in Tables IV and V.

A treatability study will be conducted during the design stage of the remedy to ensure that the in situ steam stripping technology can be utilized effectively. Also, during design, additional sampling will be conducted to further refine the treatment area (i.e. those areas above the action levels specified in the FS) and will include sampling in the former drum storage area.

Should any problems arise with this technology, however, one can switch to soil stripping with hot air which is a variation of this method and uses exactly the same equipment. Soil stripping with hot air, although innovative, is a proven technology and has been used in actual remediations.

Steam and air stripping are innovative technologies and require treatability studies. Since a certain degree of uncertainty exists regarding the implementability of these technologies, a contingency plan for the remediation of the soils will be implemented if the treatability studies indicate that these technologies would not be effective. The contingency for soil remediation is Alternative 4b, source removal and offsite incineration. Although more costly, this alternative is fully protective and will achieve the remedial goals specified in this decision summary.

STATUTORY DETERMINATIONS

Under its legal authority, EPA's primary responsibility at Superfund sites is to undertake remedial actions that protect human health and the environment. When complete, the selected remedial action for this site will comply with applicable or relevent and appropriate environmental standards established under Federal and State environmental laws unless a statutory waiver is justified. The selected remedy is cost effective and utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the remedy employs treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as its principal element.

Protection of Human Health and the Environment

The selected remedy and contingency remedy eliminate all outstanding threats posed by the site. Both reduce contamination of site materials down to health based levels except in those cases were the upgradient concentrations exceed these levels. It is assumed that the remedy for the 2nd operable unit will reduce the upgradient contaminant concentrations. Both the selected remedy and the contingency remedy remove a continuing threat to groundwater posed by the on-site contaminated soils.

Compliance with ARARs

At the completion of response actions, the selected remedy and the contingency remedy will both have complied with the following ARARs and considerations:

Action-specific ARARs:

SDWA Maximum Contaminant Levels (40 CFR 141.11-141.16) and 6 NYCRR Groundwater Quality Regulations (Part 703.5, 703.6, 703.7) provide standards for toxic compounds for public drinking systems. The reinjection process for the treated groundwater will meet underground injection well regulations by its status as a Superfund remedial action under 40 CFR 147. The extracted groundwater will be treated to meet the above referenced drinking water standards prior to reinjection.

Spent carbon from the ground water treatment system for removal of organics will be disposed of offsite, as well as any treatment residuals, consistent with applicable RCRA land disposal restrictions under 40 CFR 268.

The treatment unit will comply with the requirements of 40 CFR Part 264, Subpart X (Miscellaneous Units).

If, after remediation, any hazardous waste constituents remaining in the groundwater and soil are above health based standards, then closure of the leaching pool under 40 CFR Part 264, Subpart G and Section 264.228 of Subpart K will be applicable.

If it is determined that the contingency remedy will be implemented, the remedy will comply with the following additional ARARs:

- RCRA 40 CFR Part 263 - Standards Applicable to Transport of Hazardous Wastes
- RCRA 40 CFR Part 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 6 NYCRR Part 372 - Hazardous Waste Manifest System & Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Subpart 373-2 - Final State Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

Chemical-specific ARARs:

Since the ground water at the site is classified as IIb (GA by NYSDEC), drinking water standards are relevant and appropriate. Again, these include, SWDA MCLs and 6NYCRR Groundwater Quality Regulations.

All air emissions will be in compliance with 6 NYCRR Parts 200, 201, 202, 211, 212 and 231.

Location-specific ARARs:

None applicable

Other Criteria, Advisories, or Guidance To Be Considered:

NY TOGS 2.1.2 and 1.1.1 provide standards for reinjection of treated groundwater and are to be considered.

Cost Effectiveness

The selected remedy is cost effective because it provides overall effectiveness proportional to its cost. The present worth is $1,195,800. The estimated costs of the selected remedy are half as much, as the soil incineration alternative; and, yet, it is as effective in the long run for it provides a permanent solution by significantly reducing the toxicity and mobility of the contaminants.

Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Possible

EPA has determined that the selected remedy, as well as the contingency remedy, represent the maximum extent to which permanent solutions and alternative treatment technologies can be utilized in a cost effective manner for the SMS site. This is evident by the selection of in situ steam stripping, clearly an innovative technology. The selected remedy represents the best balance of the nine evaluation criteria used to judge all alternatives.

The groundwater treatment used in both the selected and contingency remedies will reduce the contaminants of concern to health protective levels prior to reinjection. After treatment is complete, the site will no longer be contributing contaminants to the underlying aquifer.

Preference for Treatment as a Principal Element

By treating the VOC contaminated soils and groundwater via in situ steam stripping and air stripping respectively, the selected remedy addresses the principal threat posed by the site through the use of treatment technologies. Therefore, the statutory preference for remedies that employ treatment as a principal element is satisfied.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the SMS Instruments Site was released to the public in July 1989. The Proposed Plan identified Alternative 2b and Alternative 6 as the preferred groundwater and soil remedies, respectively. EPA reviewed all comments submitted during the public comment period. Upon review of these comments, it was determined that no significant changes to the selected remedy, as it was originally identified in the Proposed Plan, were necessary. However, based on the public concern regarding the innovative nature of Alternative 6, EPA has decided that Alternative 4 (excavation and off-site thermal destruction) should be added as a contingency remedy for soils treatment in the event Alternative 6 is not effective. The public was confident that Alternative 6 would be effective and was supportive of the contingency remedy concept.

APPENDIX I

FIGURES

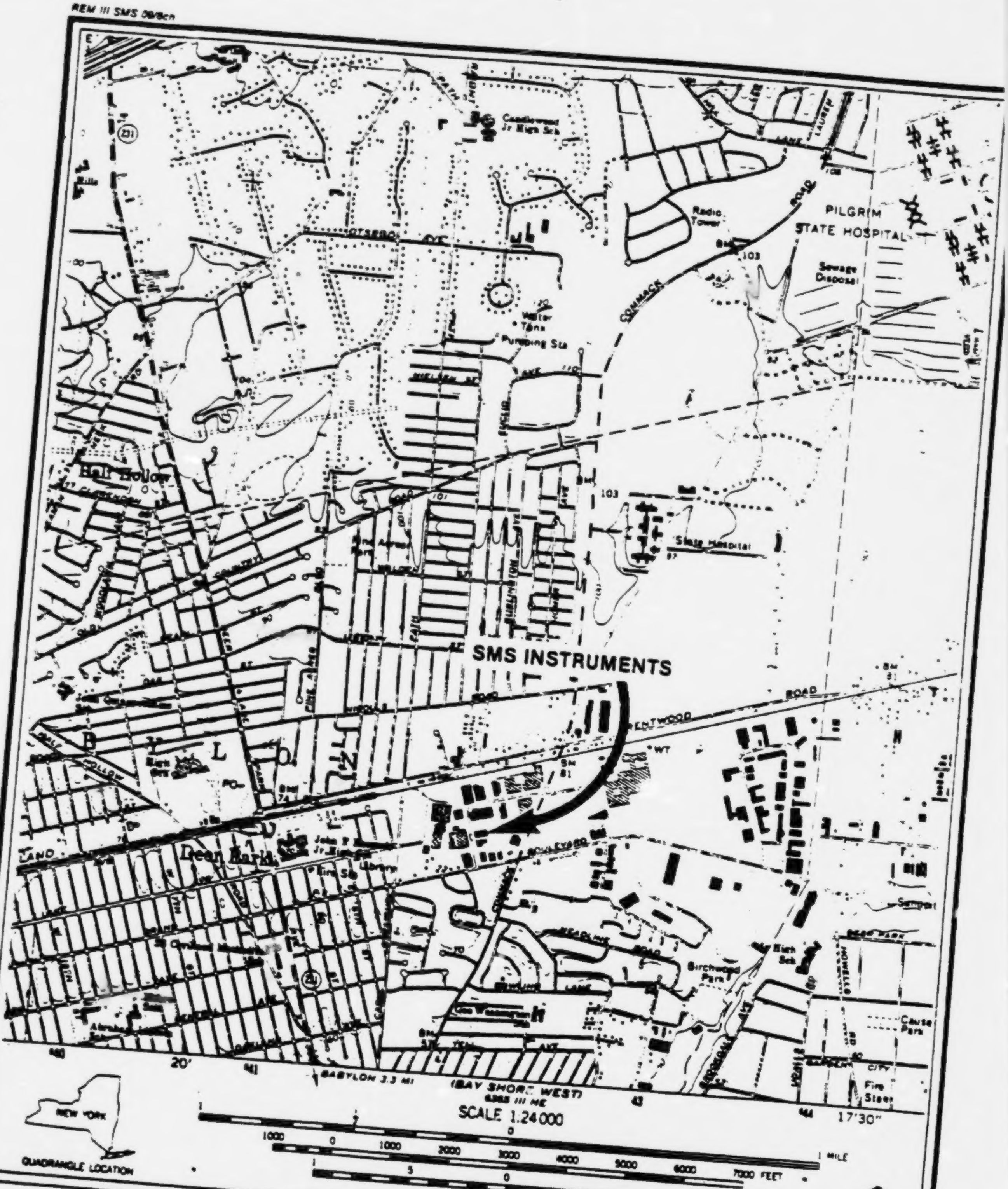

SMS INSTRUMENTS
PILGRIM STATE HOSPITAL
Radio Tower
Sewage Disposal
Water Tank
Pumping Sta
Candlewood Jr High Sch
State Hospital
Half Hollow
Deer Park
John F Kennedy Jr High Sch
Library
Fire Sta
Birchwood Park
Elem Sch
COMMACK ROAD
OTSEGO AVE
BRENTWOOD ROAD
BOULEVARD
Causeway Park
Fire Sta
BABYLON 3.3 MI
(BAY SHORE WEST)
6365 III NE
20'
17'30"
NEW YORK
QUADRANGLE LOCATION
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETER
N

Figure 1

SITE LOCATION MAP, SMS INSTRUMENTS
DEER PARK, NEW YORK

US ENVIRONMENTAL
PROTECTION AGENCY

Reproduced from best available copy.

REM III SMS [illegible]

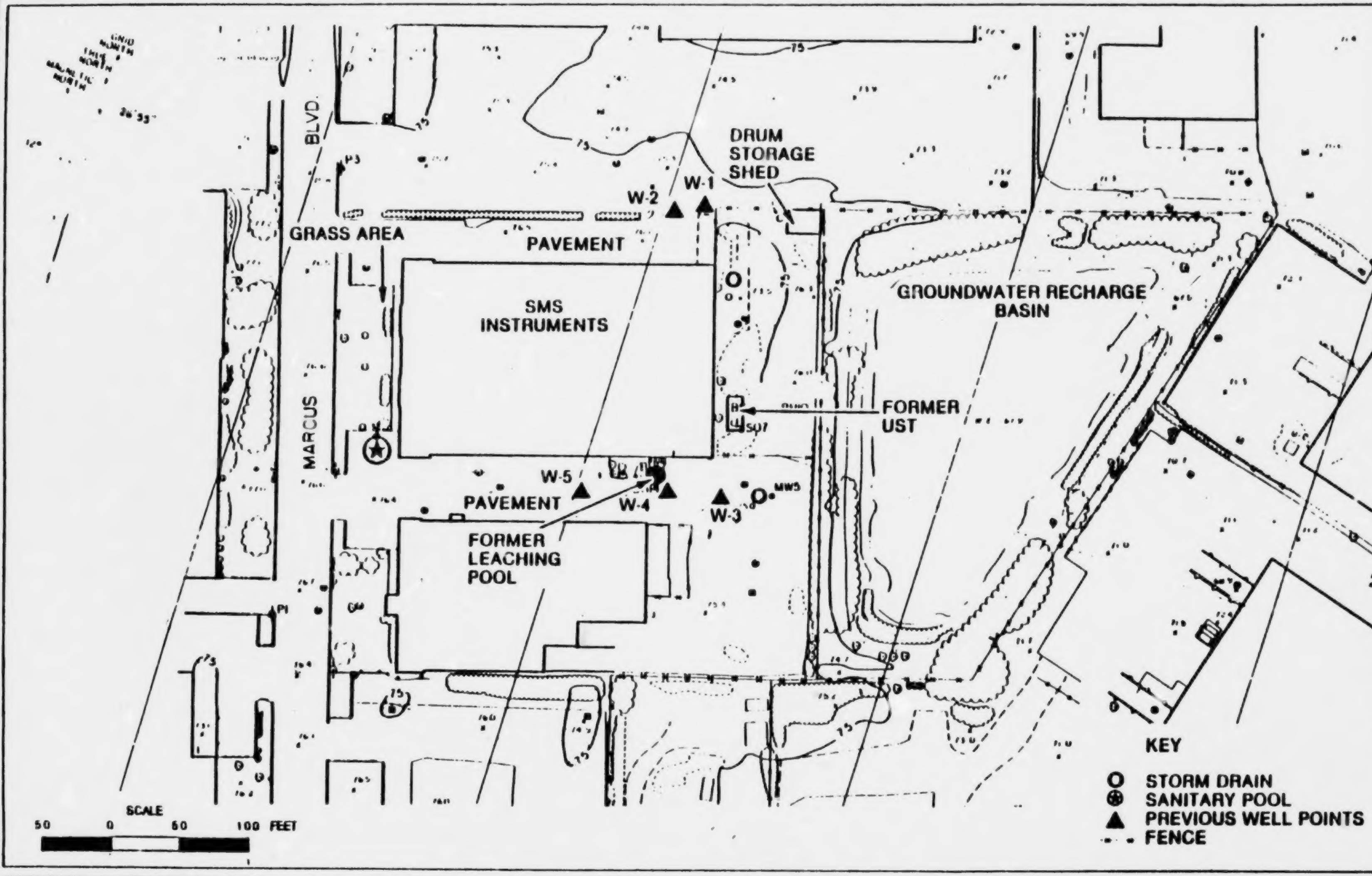

GRID NORTH
TRUE NORTH
MAGNETIC NORTH
BLVD.
MARCUS
GRASS AREA
PAVEMENT
SMS INSTRUMENTS
DRUM STORAGE SHED
W-1
W-2
W-3
W-4
W-5
MW5
GROUNDWATER RECHARGE BASIN
FORMER UST
PAVEMENT
FORMER LEACHING POOL
P1
P3
75
SCALE
50
0
50
100 FEET
KEY
O STORM DRAIN
⊛ SANITARY POOL
▲ PREVIOUS WELL POINTS
- - • FENCE

Figure 2

SITE DESCRIPTION, SMS INSTRUMENTS
DEER PARK, NEW YORK

US ENVIRONMENTAL
PROTECTION AGENCY

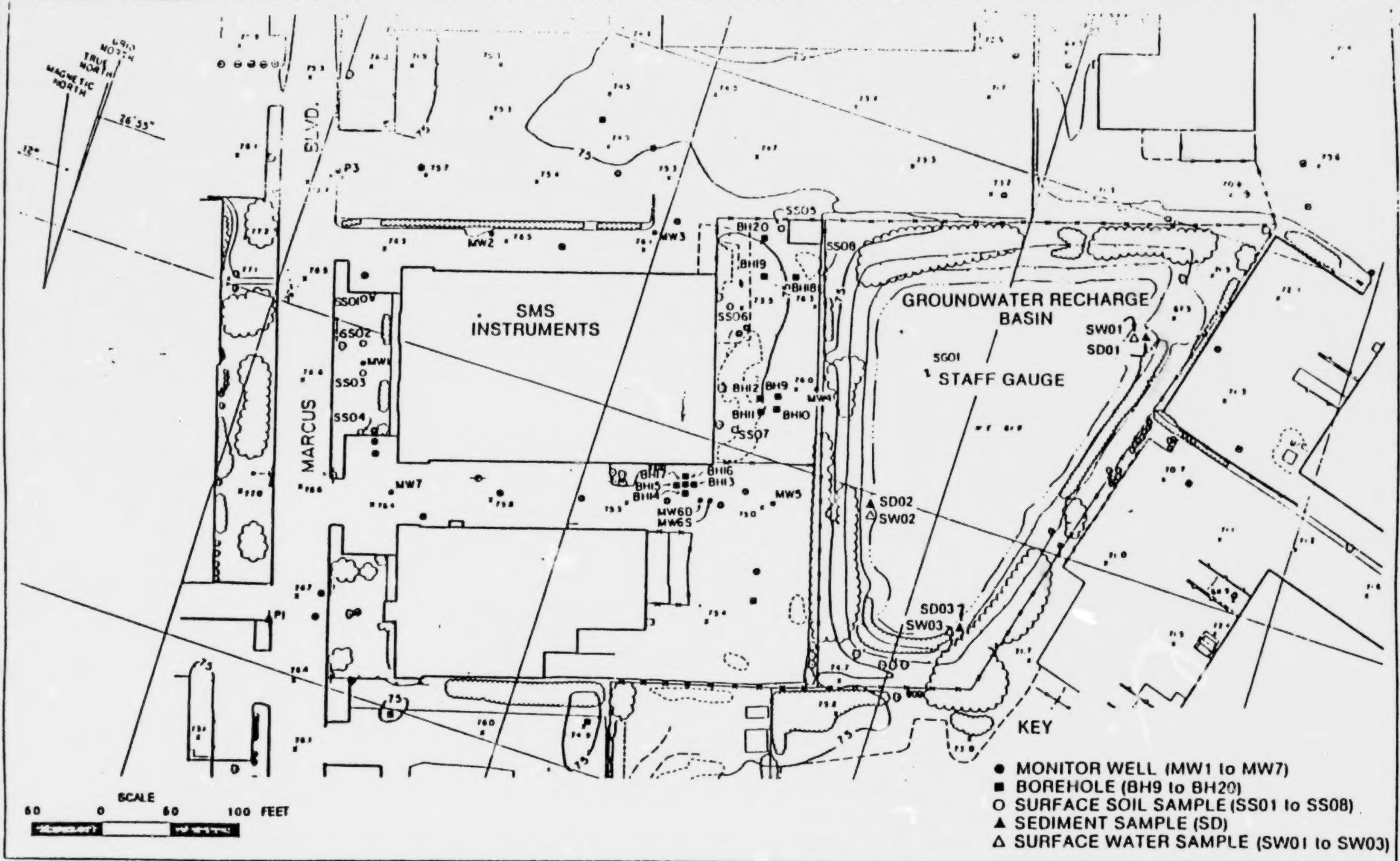

GRID NORTH
TRUE NORTH
MAGNETIC NORTH
26'35"
12°
BLVD.
MARCUS
SMS INSTRUMENTS
GROUNDWATER RECHARGE BASIN
STAFF GAUGE
SG01
SW01
SD01
SD02
SW02
SD03
SW03
SS01
SS02
SS03
SS04
SS05
SS06
SS07
SS08
MW1
MW2
MW3
MW4
MW5
MW6D
MW6S
MW7
BH9
BH10
BH11
BH12
BH13
BH14
BH15
BH16
BH17
BH18
BH19
BH20
P1
P3
75
SCALE
60 0 60 100 FEET
KEY
● MONITOR WELL (MW1 to MW7)
■ BOREHOLE (BH9 to BH20)
O SURFACE SOIL SAMPLE (SS01 to SS08)
▲ SEDIMENT SAMPLE (SD)
△ SURFACE WATER SAMPLE (SW01 to SW03)

Figure 3
ONSITE SAMPLE LOCATION MAP,
SMS INSTRUMENTS

SOURCE: ESE, 1988.

US ENVIRONMENTAL PROTECTION AGENCY

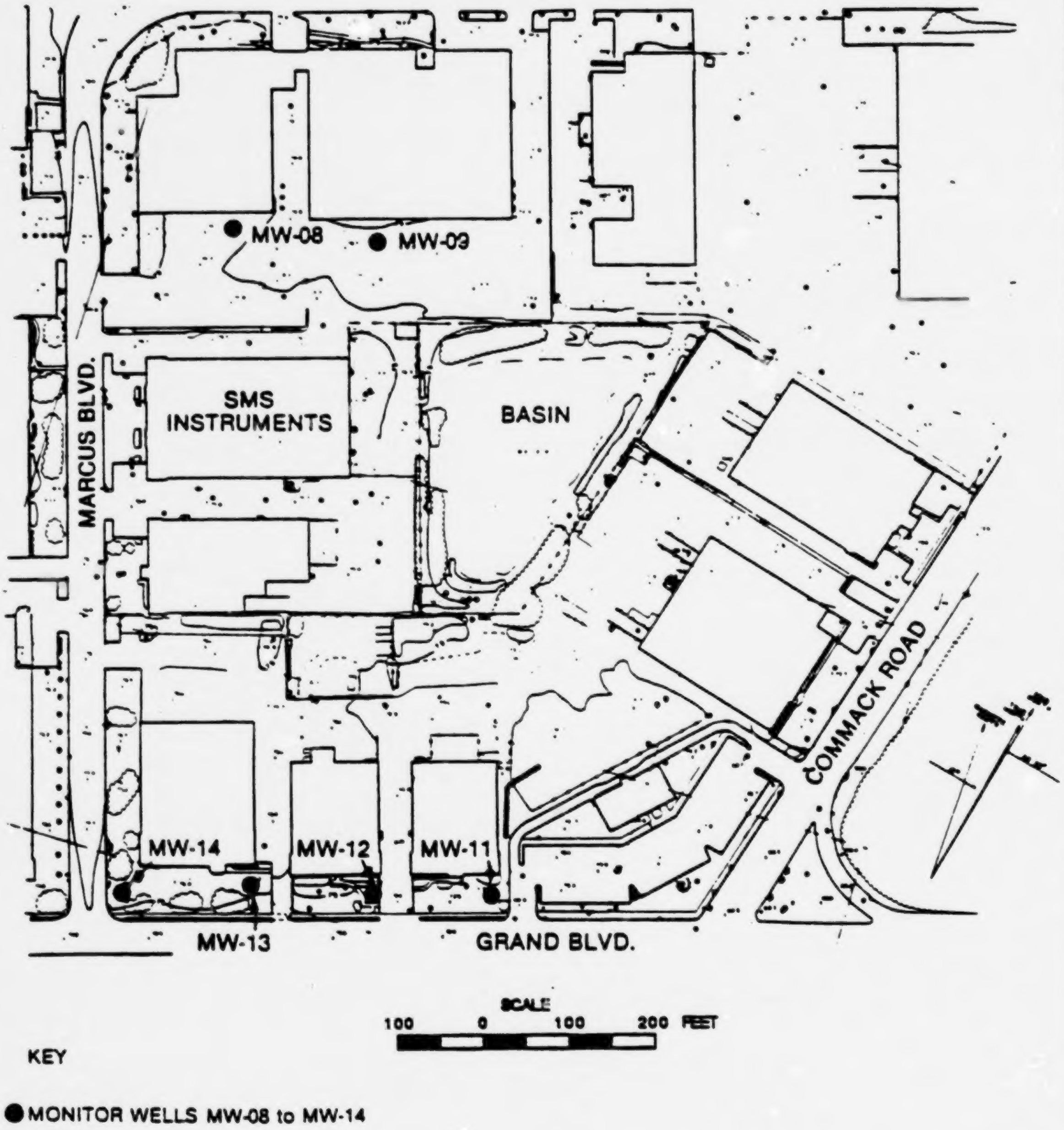

MW-08
MW-09
MARCUS BLVD.
SMS INSTRUMENTS
BASIN
COMMACK ROAD
MW-14
MW-12
MW-11
MW-13
GRAND BLVD.
SCALE
100
0
100
200 FEET
KEY
● MONITOR WELLS MW-08 to MW-14

Figure 4
OFFSITE MONITOR WELL LOCATIONS,
SMS INSTRUMENTS

SOURCE: ESE, 1988.

US ENVIRONMENTAL
PROTECTION AGENCY

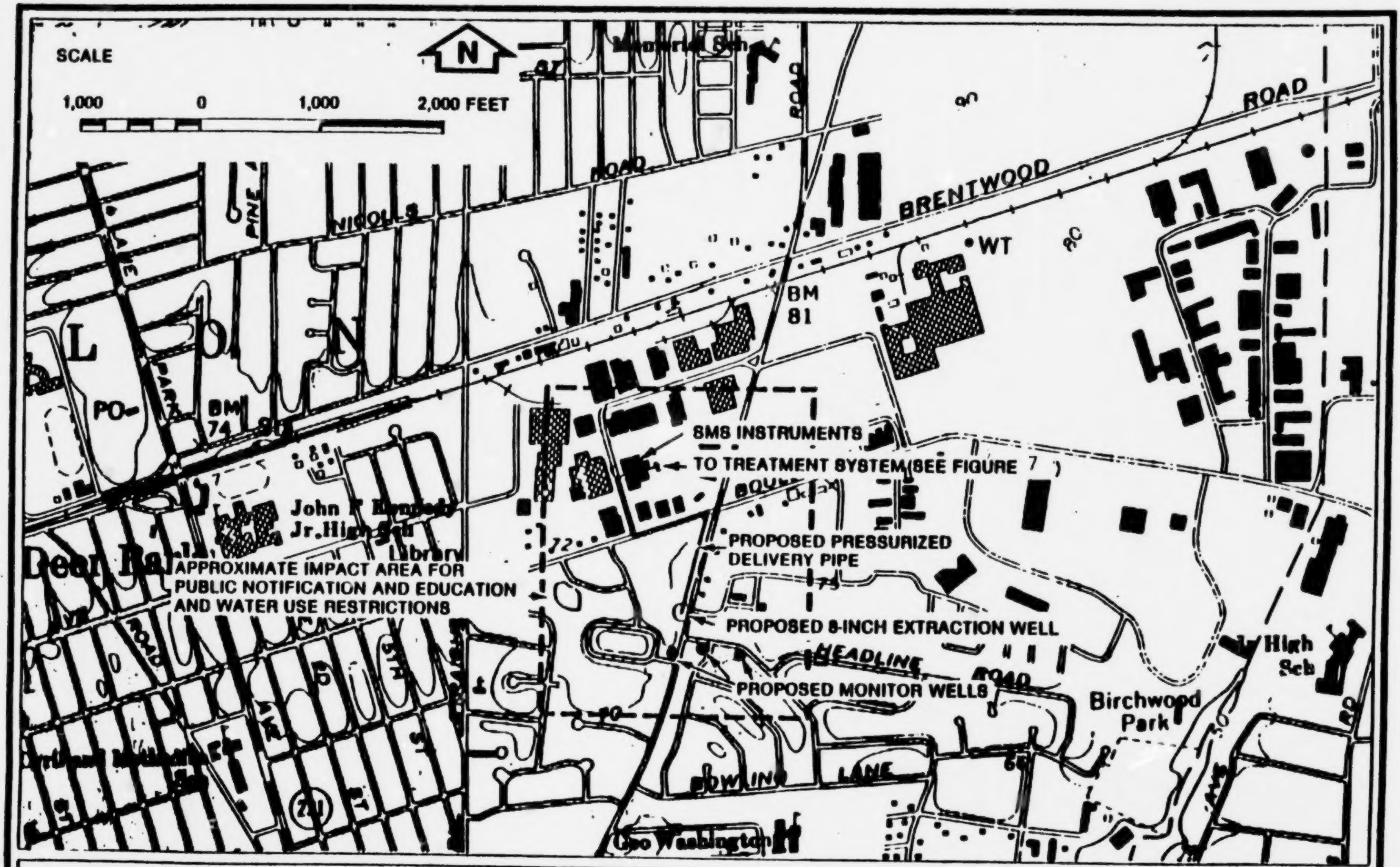

SCALE
1,000
0
1,000
2,000 FEET
N
BRENTWOOD
ROAD
NICOLLS
ROAD
PINE
ROAD
BM
81
WT
BM
74
PO
John F Kennedy
Jr. High Sch
Library
Deer Pa
SMS INSTRUMENTS
TO TREATMENT SYSTEM (SEE FIGURE 7)
PROPOSED PRESSURIZED
DELIVERY PIPE
PROPOSED 8-INCH EXTRACTION WELL
PROPOSED MONITOR WELLS
APPROXIMATE IMPACT AREA FOR
PUBLIC NOTIFICATION AND EDUCATION
AND WATER USE RESTRICTIONS
HEADLINE
ROAD
Birchwood
Park
High
Sch
BOWLING
LANE
Geo Washington
231
AVE
5TH
ST
72
75
66

Figure 5
LOCATION OF EXTRACTION WELL AND AREA IMPACTED BY GROUNDWATER EXTRACTION ALTERNATIVE

SOURCE: ESE, 1989.

US ENVIRONMENTAL
PROTECTION AGENCY

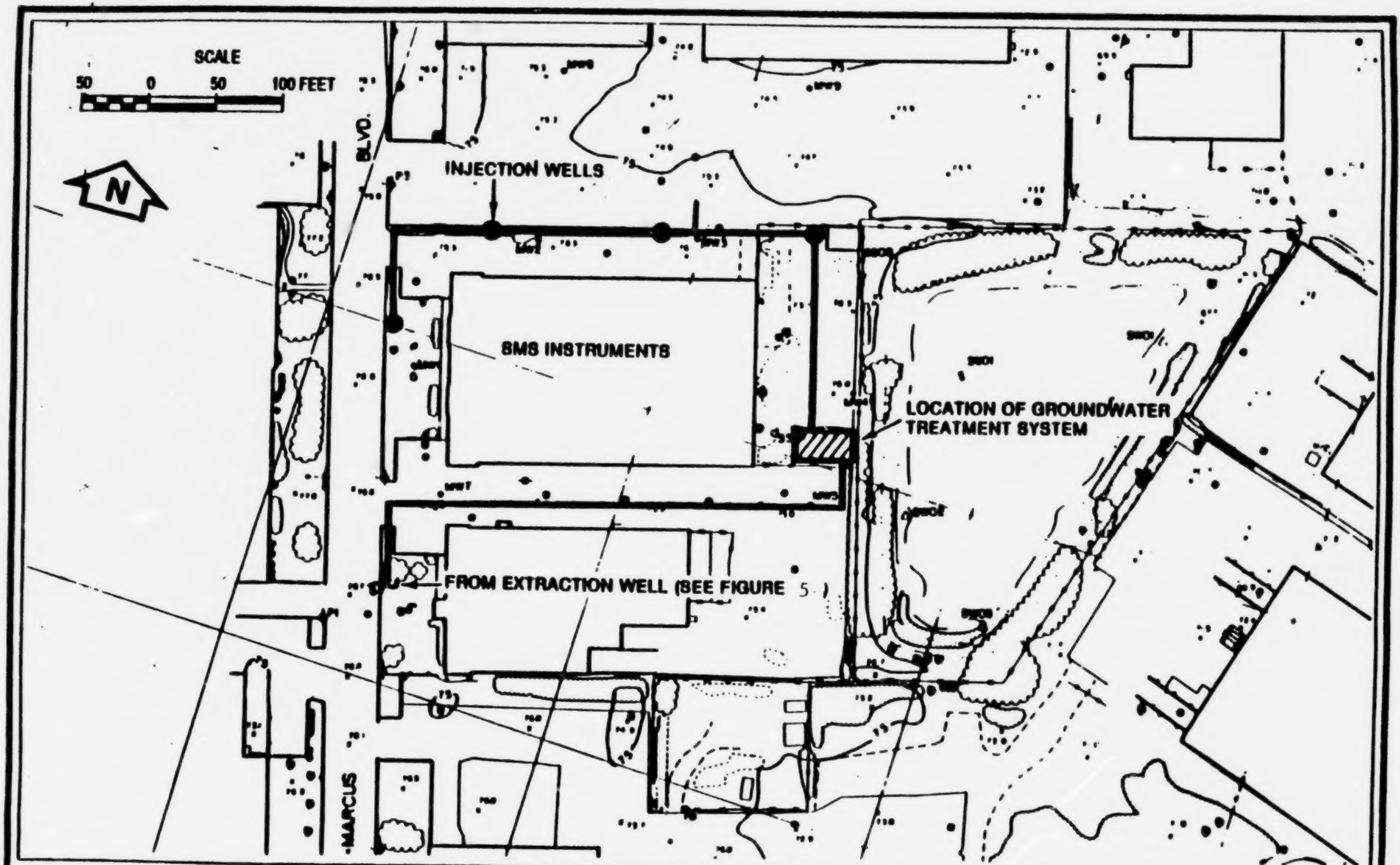

SCALE
50
0
50
100 FEET
N
BLVD.
MARCUS
INJECTION WELLS
SMS INSTRUMENTS
LOCATION OF GROUNDWATER TREATMENT SYSTEM
FROM EXTRACTION WELL (SEE FIGURE 5)

Figure 6
LOCATION OF GROUNDWATER TREATMENT SYSTEM AND ONSITE DISCHARGE SYSTEM

SOURCE: ESE, 1989.

US ENVIRONMENTAL PROTECTION AGENCY

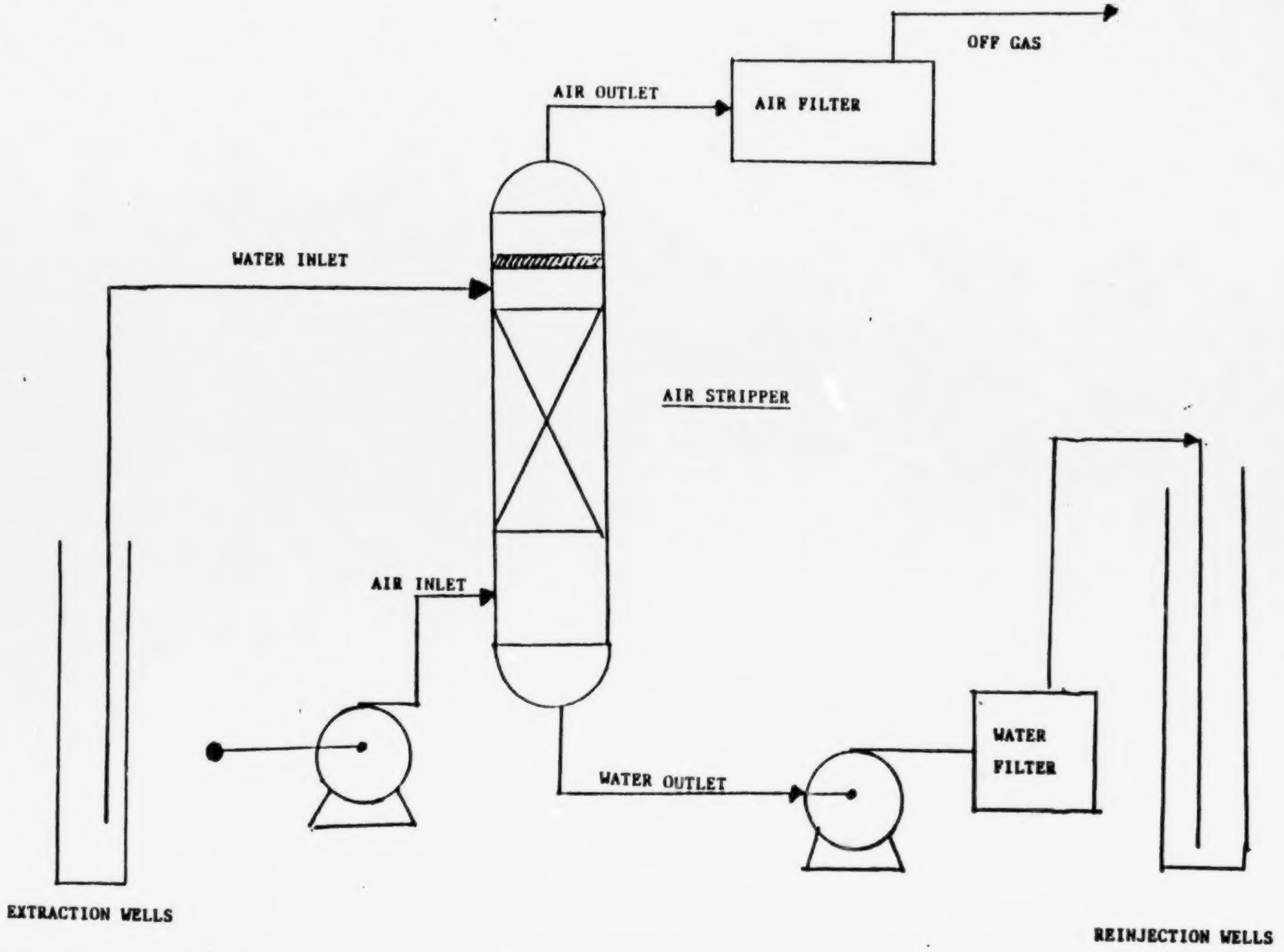
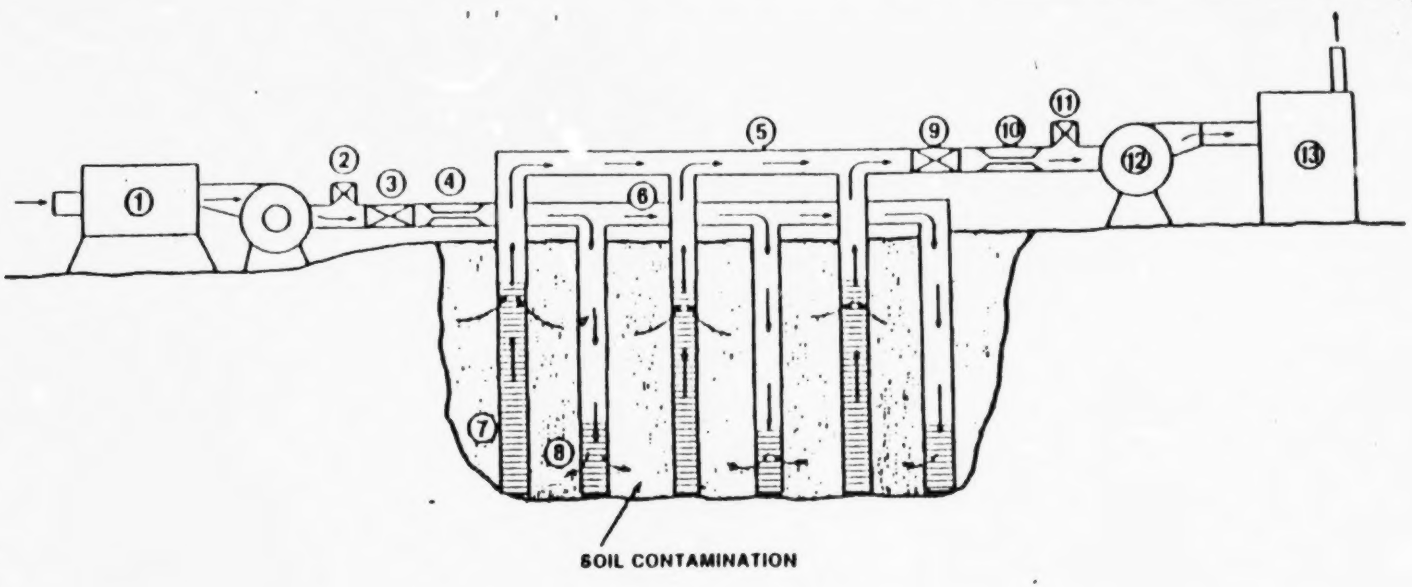

OFF GAS
AIR OUTLET
AIR FILTER
WATER INLET
AIR STRIPPER
AIR INLET
WATER OUTLET
WATER
FILTER
EXTRACTION WELLS
REINJECTION WELLS

Figure 7

AIR STRIPPER SCHEMATIC

US ENVIRONMENTAL PROTECTION AGENCY



1 Steam Generator
2 Injection Air Bypass Valve
3 Injection Air Sampling Port
4 Injection Air Flow Meter
5 Extraction Manifold
6 Injection Manifold
7 Slotted Vertical Extraction Vent Pipe
8 Slotted Vertical Injection Vent Pipe
9 Extraction Air Sampling Port
10 Extraction Air Flow Meter
11 Extraction Air Bypass Valve
12 Vacuum Extraction Pump
13 Vapor/Separation Treatment Unit

Figure 8
TYPICAL SCHEMATIC OF IN SITU
STEAM STRIPPING APPARATUS

SOURCE: WESTON, 1985.

**US ENVIRONMENTAL
PROTECTION AGENCY**

APPENDIX II

TABLES

Table 1

Contamination and Concentrations Detected in Various Media at SMS Instruments site

	Media					
	Source Area Soil		Groundwater			
Contaminant	Surface	Subsurface	Offsite***** Upgradient	Onsite	Offsite* Downgradient	Chemical-Specific ARAR for Water
Volatiles						
Trans-1,2 dichloroethane	----	1,500 (456)	35(28)	1,600 (530)	180 (35)	5**
Tetrachloroethene	540 (198)	6,500 (1,099)	5(-)	47 (20.8)	25 (10.4)	0.7****
Trichloroethene	16,000 (5,388)	51 (20)	14 (11.5)	24,000 (4,396)	60 (24)	5
Total Xylenes	1,500 (1,450)	1,200,000 (306,139)	----	2,200 (1,750)	69 (34.6)	5**
Ethylbenzene	720 (374)	150,000 (63,400)	----	240 (215)	13 (6.8)	5**
Chlorobenzene	----	340,000 (152,286)	----	670 (568)	493 (289.5)	5**
1,1-Dichloroethane	----	----	80(35)	12(7-2)	110 (40.3)	5**
Semi-Volatiles						
1,4-Dichlorobenzene	----	330,000 (68,900)	----	78 (59)	63 (46.5)	4.7***
1,3-Dichlorobenzene	----	64,000 (74,980)	----	28 (22.5)	11 (8.5)	5**
1,2-Dichlorobenzene	98,000 (1)	1,800,000 (356,700)	----	68 (60.5)	188 (140)	4.7***
Naphthelene	----	16,000 (7,044)	----	45 (34.5)	7 (6.5)	5**
Inorganics						
Chromium	16,000 (11,000)	52,000 (20,000)	28(21.3)	47 (23)	38 (24.7)*	50
Lead	50,000 (25,500)	7,900 (3,100)	37(20.8)	190 (33.0)	70 (24.6)	25**

Note: All concentrations reported as micrograms per liter (µg/L) for water samples and micrograms per kilogram (µg/kg) for soils.
Maxium detected concentrations and representative values in parentheses.
ARARs are MCLs or MCLGs unless indicated differently.
---- below detection limit.

*Downgradient offsite groundwater samples taken from wells identified as the exposure point for the PHE.
*Chromium concentrations at the exposure point do not exceed ARARs.
**New York State standard, NYS Sanitary Code, Part 5-1, January, 1989
***New York State standard, 6NYCRR Part 703.5
****New York State standard, TOGS 1.1.1.
*****Wells MW-08 and MW-09 (see Figure 4)

Table II

Summary of Carcinogenic Risk and Noncarcinogenic Hazard Levels for SMS Instruments Site Indicator Chemicals

Exposure Pathway/Receptor	Carcinogenic Risk (CRL)	Noncarcinogenic Hazard (HI)
Measured Data		
Potable Use	2.27×10^{-5}	6.86×10^{-1}
Casual Ingestion	2.27×10^{-7}	6.86×10^{-3}
Dermal Absorption	1.80×10^{-9}	5.44×10^{-5}
Vegetable Consumption	3.66×10^{-7}	5.70×10^{-3}
Modeled Data		
Potable Use	1.34×10^{-5}	8.55×10^{-1}
Casual Ingestion	1.34×10^{-7}	8.55×10^{-3}
Dermal Absorption	1.06×10^{-9}	6.76×10^{-5}
Vegetable Consumption	2.37×10^{-7}	8.00×10^{-3}

CRL = cancer risk level.
HI = hazard index.

TABLE III

Present Worth Cost for Remedial Alternatives
SMS Site
(Costs are rounded off to the nearest $100.00)

Alternative	Present Worth	Capital Cost	Annual O&M	Periodic Costs
1a: No action (source untreated)	$ 300,300	$ 70,400	$ 13,600	$ 7,500
1b: No action (source treated)	$ 300,000	$ 70,400	$ 13,600	$ 7,500
2a: Groundwater Extraction, Treatment and Surface Water Discharge	$ 1,888,800	$ 544,000	$ 128,200	$ 7,500
2b: Groundwater Extraction, Treatment and Reinjection	$ 809,000	$ 365,300	$ 123,400	$ 7,500
3: Source Control/No action	$ 330,400	$ 73,200	$ 14,100	$ 14,600
4a: Source Removal and Offsite Disposal	$ 520,200	$ 520,200	$ 0	$ 0
4b: Source Removal and Offsite Incineration	$ 2,036,500	$ 2,036,500	$ 0	$ 0
5 : Low Temperature Soil Stripping	$ 887,000	$ 629,800	$ 0	$ 0
6 : In situ Steam Stripping	$ 386,800	$ 386,800	$ 0	$ 0

Table IV

COST SUMMARY FOR THE SELECTED REMEDY

Groundwater Extraction Treatment and Reinjection

Element/Item	Quantity	Unit	Unit Cost	Total Cost
CAPITAL:				
Direct Cost				
Well Construction				
Drilling - 10" OD HSA	500	FT	$95.00	$47,500.00
Casing - Low Carbon Steel 8"	70	FT	$80.00	$5,600.00
Screen - LCS wire wound 8"	30	FT	$125.00	$3,750.00
Casing - Low Carbon Steel 6"	200	FT	$65.00	$13,000.00
Screen - LCS wire wound 6"	200	FT	$100.00	$20,000.00
Filter Pack - 100/weight	250	CF	$18.00	$4,500.00
Bentonite Pelets	35	LBS	$23.00	$805.00
Surface Pad - Concrete	35	CF	$20.00	$700.00
Submersible Pump - 15HP	1	EA	$4,000.00	$4,000.00
Well Development	30	HR	$150.00	$4,500.00
Water Tank	10	DAY	$250.00	$2,500.00
Mobilization	1	LS	$5,000.00	$5,000.00
			SUB TOTAL	$111,855.00
Treatment System				
Site Preparation	0.5	AC	$1,100.00	$550.00
Air Stripping Towers	2	EA	$25,000.00	$50,000.00
Control Panel, Conduit, & Appurt.	1	EA	$10,000.00	$10,000.00
Integrating Controls for Well	1	LS	$3,500.00	$3,500.00
Deep Bed Filters & Integ. Controls	2	EA	$13,000.00	$26,000.00
Backwash Tank & Apputenances	1	EA	$8,000.00	$8,000.00
Discharge Pump & Appurtenances	1	EA	$14,000.00	$14,000.00
Wet Well	1	EA	$2,200.00	$2,200.00
Road Crossing and Pavment Replcement	1	LS	$10,000.00	$10,000.00
Electrical Connection	1	LS	$1,200.00	$1,200.00
Vapor Collection Connection	1	LS	$1,000.00	$1,000.00
			SUB TOTAL	$126,450.00
Total Direct Cost:			SUB TOTAL	$238,305.00
Indirect Cost				
Well Locating				
Review Documents	50	HR	$50.00	$2,500.00
Modeling	120	HR	$60.00	$7,200.00
Pump Test	1	LS	$6,000.00	$6,000.00
Survey	2	AC	$2,400.00	$4,800.00
Right-of-Way/Easement Aquisition	0.5	AC	$30,000.00	$15,000.00
License and Permiting	1	LS	$12,000.00	$12,000.00
Startup & Shakedown Cost	2	WK	$4,000.00	$8,000.00
Contigencies - 15%				$35,745.75
Engineering - 15%				$35,745.75
			SUB TOTAL	$126,991.50
TOTAL CAPITAL COST:				$365,296.50

Table IV (Cont'd)

Element/Item	Quantity	Unit	Unit Cost	Total Cost
O&M				
Annual				
Labor	312	HR	$50.00	$15,600.00
Electricity	12	MNTH	$2,600.00	$31,200.00
Materials	12	MNTH	$100.00	$1,200.00
Vapor Treartment Packs	6	UNITS	$5,000.00	$30,000.00
Monitoring				
Sampling - Analytical	52	EA	$800.00	$41,600.00
Sampling - Labor	52	HR	$50.00	$2,600.00
Report	24	HR	$50.00	$1,200.00
			SUB TOTAL	$123,400.00
Periodic Costs (every 5 years)				
Site Review and Public Health Assmnt.	125	HR	$60.00	$7,500.00
			SUB TOTAL	$7,500.00
PRESENT WORTH: (5% over 4 years)				
Present Worth Capital				$365,296.50
Present Worth Annual O&M				$437,576.40
Present Worth Periodic O&M				$6,170.25
TOTAL PRESENT WORTH				$809,043.15

Document Number: SMS-001-0518 To 0519 Date: 06/08/87

Title: (Special Notice Letter stating that EPA requires responsible parties to take response action at the site)

Type: CORRESPONDENCE
Author: Luftig, Stephen D: US EPA
Recipient: Schusheim, Sol M: SMS Instruments Inc

Document Number: SMS-001-0858 To 0943 Date: 08/01/87

Title: Work Plan for Remedial Investigation/Feasibility Study - SMS Instruments Site

Type: PLAN
Author: none: Ebasco Services
Recipient: none: US EPA

Document Number: SMS-001-0580 To 0580 Date: 11/16/88

Title: (Memo regarding comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Johnson, Denise: Agency for Toxic Substances & Disease Registry (ATSDR)
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0579 To 0579 Date: 11/21/88

Title: (Letter regarding comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Lindsay, John A: National Oceanic & Atmospheric Administration (NOAA)
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0576 To 0577 Date: 11/23/88

Title: (Memo regarding geologist comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Willis, Kevin: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0578 To 0578 Date: 11/23/88

Title: (Memo regarding Federal Activities Section comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Kelly, Robert F: US EPA
Recipient: McCabe, William: US EPA

Document Number: SMS-001-0567 To 0575 Date: 11/28/88

Title: (Memo forwarding attached Draft Preliminary Health Assessment for review and comment)

Type: CORRESPONDENCE
Author: Nelson, William Q: Agency for Toxic Substances & Disease Registry (ATSDR)
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0744 To 0745 Date: 11/30/88

Title: (Letter forwarding the Final Community Relations Plan)

Type: CORRESPONDENCE
Author: Sachdev, Dev R: Ebasco Services
Recipient: Johnson, Lillian D: US EPA
Attached: SMS-001-0742

Document Number: SMS-001-0565 To 0566 Date: 12/01/88

Title: (Memo regarding Air Programs Branch comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Barrett, William J: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0742 To 0766 Parent: SMS-001-0744 Date: 12/01/88

Title: Final Community Relations Plan

Type: PLAN
Author: Conway, Sheila: Ebasco Services
Recipient: none: US EPA

Document Number: SMS-001-0560 To 0564 Parent: SMS-001-0558 Date: 12/15/88

Title: (Letter regarding comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Wither, Robert: NY Dept of Environmental Conservation
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0558 To 0559 Date: 12/27/88

Title: (Letter regarding additional comments on the Draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Wither, Robert: NY Dept of Environmental Conservation
Recipient: Fayon, Abram Miko: US EPA
Attached: SMS-001-0560

Document Number: SMS-001-0001 To 0352 Parent: SMS-001-0003 Date: 02/01/89

Title: Final Remedial Investigation Report for RI/FS at site

Type: PLAN
Author: Byroade, Jon D: Ebasco Services
Recipient: none: US EPA

Document Number: SMS-001-0003 To 0003 Date: 02/24/89

Title: (Letter forwarding Final Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Sachdev, Dev R: Ebasco Services
Recipient: Alvi, M Shaheer: US EPA
Attached: SMS-001-0001

Document Number: SMS-001-0557 To 0557 Date: 03/31/89

Title: (Memo regarding Environmental Impacts Branch comments on the Draft Workplan for the remedial design/remedial action for the site)

Type: CORRESPONDENCE
Author: Arenwald, Joanne R: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0353 To 0504

Date: 04/01/89

Title: Draft Feasibility Study Report

Type: PLAN
Condition: DRAFT
Author: Byroade, Jon D: Ebasco Services
Recipient: none: US EPA

Document Number: SMS-001-0556 To 0556

Date: 04/24/89

Title: (Memo regarding Environmental Impacts Branch comments on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Arenwald, Joanne R: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0553 To 0555

Parent: SMS-001-0509

Date: 05/03/89

Title: (Memo regarding Water Management Division comments on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Malleck, John S: US EPA
Recipient: McCabe, William: US EPA

Document Number: SMS-001-0551 To 0552

Date: 05/05/89

Title: (Memo regarding Air Programs & Air Compliance Branch comments on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Barrett, William J: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0548 To 0550

Parent: SMS-001-0520

Date: 05/17/89

Title: (Letter commenting on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Mann, Kim L: NY Dept of Health
Recipient: Wither, Robert: NY Dept of Environmental Conservation

Document Number: SMS-001-0536 To 0540 Parent: SMS-001-0520 Date: 05/18/89

Title: (Letter commenting on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Wither, Robert: NY Dept of Environmental Conservation
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0541 To 0542 Parent: SMS-001-0514 Date: 05/18/89

Title: (Memo regarding Hazardous Waste Facilities Branch comments on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Bellina, Andrew: US EPA
Recipient: McCabe, William: US EPA

Document Number: SMS-001-0543 To 0547 Date: 05/18/89

Title: (Letter commenting on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Wither, Robert: NY Dept of Environmental Conservation
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0535 To 0535 Date: 05/23/89

Title: (Memo regarding SMS ARARs)

Type: CORRESPONDENCE
Author: Barrett, William J: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0595 To 0741 Date: 06/01/89

Title: Final Feasibility Study Report for SMS Instruments Site Volume II

Type: PLAN
Condition: DRAFT
Author: Byroade, Jon D: Ebasco Services
Recipient: none: US EPA

Document Number: SMS-001-0532 To 0534 Date: 06/05/89

Title: (Letter forwarding attached maps showing the location of water distribution piping and public water supply wellfields in the vicinity of the site)

Type: CORRESPONDENCE
Author: Santino, Alexander M: Suffolk NY, County of
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0520 To 0531 Date: 06/06/89

Title: (Letter forwarding attached response to NYSDEC 05/18/89 comments and NYSDOH 05/17/89 comments on the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Fayon, Abram Miko: US EPA
Recipient: Wither, Robert: NY Dept of Environmental Conservation
Attached: SMS-001-0536 SMS-001-0548

Document Number: SMS-001-0506 To 0508 Date: 06/15/89

Title: (Memo forwarding attached response to 05/05/89 comments regarding the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: Garbarini, Douglas R: US EPA
Recipient: Truchan, Paul R: US EPA

Document Number: SMS-001-0509 To 0513 Date: 06/15/89

Title: (Memo forwarding attached response to 05/03/89 comments regarding the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: McCabe, William: US EPA
Recipient: Malleck, John S: US EPA
Attached: SMS-001-0553

Document Number: SMS-001-0514 To 0517 Date: 06/15/89

Title: (Memo forwarding attached response to 05/18/89 comments regarding the Draft Feasibility Study)

Type: CORRESPONDENCE
Author: McCabe, William: US EPA
Recipient: Bellina, Andrew: US EPA
Attached: SMS-001-0541

Document Number: SMS-001-0505 To 0505 Date: 07/10/89

Title: (Memo regarding Air Programs Branch comments on the Proposed Remedial Action Plan for the site)

Type: CORRESPONDENCE
Author: Barrett, William J: US EPA
Recipient: Fayon, Abram Miko: US EPA

Document Number: SMS-001-0581 To 0594 Date: 07/14/89

Title: Proposed Remedial Action Plan - SMS Instruments Superfund Site

Type: PLAN
Author: Fayon, Abram Miko: US EPA
Recipient: none: none

Document Number: SMS-001-0767 To 0780 Date: 07/14/89

Title: Proposed Remedial Action Plan - SMS Instruments Superfund Site

Type: PLAN
Author: Fayon, Abram Miko: US EPA
Recipient: none: none

Document Number: SMS-001-0782 To 0820 Parent: SMS-001-0781 Date: 08/01/89

Title: Final Responsiveness Summary - SMS Instruments Site

Type: PLAN
Author: Winfield, Julie: ICF Incorporated
Recipient: none: US EPA

Document Number: SMS-001-0822 To 0857 Parent: SMS-001-0821 Date: 08/01/89

Title: Final Responsiveness Summary - SMS Instruments Site

Type: PLAN
Author: Winfield, Julie: ICF Incorporated
Recipient: none: US EPA

Document Number: SMS-001-0781 To 0781 Date: 08/25/89

Title: (Letter submitting Final Responsiveness Summary)

Type: CORRESPONDENCE
Author: Sachdev, Dev R: Ebasco Services
Recipient: Fayon, Abram Miko: US EPA
Attached: SMS-001-0782

Document Number: SMS-001-0821 To 0821 Date: 09/09/89

Title: (Memo forwarding the most recent copy of the Final Responsiveness Summary, completed 09/08/89 and incorporating Doug Garbarini's comments)

Type: CORRESPONDENCE
Author: Winfield, Julie: ICF Incorporated
Recipient: Garbarini, Douglas R: US EPA
Attached: SMS-001-0822

APPENDIX IV

NYSDEC LETTER OF CONCURRENCE

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

Thomas C. Jorling
Commissioner

SEP 28 1989

Mr. William J. Muszynski, P.E.
Acting Regional Administrator
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

Dear Mr. Muszynski:

RE: Record of Decision (ROD)
SMS Instruments #152026

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the draft Record of Decision, dated August 28, 1989, for the SMS Instruments site and concurs with the selected remedy as follows:

1. Contaminated soil will be treated by in-situ steam stripping. Volatile organics will be removed to action levels identified in Table 10-3 of the Final SMS Instruments Feasibility Study report dated June, 1989. This treatment will also be utilized for contaminated soil in the drum storage area.

2. Groundwater will be remediated by extraction, treatment and reinjection to meet State drinking water standards and guidance values.

3. A treatability study will be conducted during the design stage of the remedy to ensure that the technology can be utilized effectively.

4. SDWA Maximum Contaminant Levels (40 CFR 141.11-141.16), SDWA MCL Goals (40 CFR 141.50-141.51), and 6 NYCRR Groundwater Quality Regulations (Parts 703.5, 703.6, 703.7) standards and goals for toxic compounds for public drinking systems will be met. The reinjection process for treated groundwater will meet underground injection well regulations as a Superfund remedial action under 40 CFR 147. The extracted groundwater will be treated to meet all drinking water standards prior to reinjection.

5. Spent carbon from the groundwater treatment system for removal of organics will be disposed of off site, as well as any treatment residuals, consistent with applicable RCRA land disposal restrictions under 40 CFR 268.

6. The groundwater at the site is classified as IIb, and drinking water standards are applicable: SDWA MCLs, SDWA MCL Goals, Water Quality Criteria under CWA and 6 NYCRR Groundwater Quality Regulations.

New York State concurrence with the final ROD is contingent upon inclusion of the following:

7. Additional sampling of soil and groundwater will be conducted to further define plume parameters (plume depth, length, width and direction of vertical flow).

8. Additional monitoring will be done to ensure that extraction wells are properly placed and that they are remediating the total extent of the plume. Design study will include a survey of which homes near the site have wells and how those wells are used.

9. Alternatives involving air stripping will contain provisions for monitoring and treating the air discharges. Additional information including cost estimates, length of time for cleanup and any effects on start-up of groundwater remediation will be developed for use of air stripping as backup technology to in-situ steam stripping.

10. At the completion of the response actions, the selected remedy and the contingency remedy will comply with ARARs noted above. Since groundwater extraction, treatment and reinjection and in-situ steam stripping are "processes" as defined by 6 NYCRR Part 200, the performance standards set by 6 NYCRR Part 212 must be met. Parts 201, 202, 211 and 231 are also relevant, since the site is in a non-attainment area for ozone.

Should you have any questions on these issues, please call Mr. Michael J. O'Toole, Jr., P.E., at (518) 457-5861.

Sincerely,

Edward O. Sullivan
Deputy Commissioner

cc: W. McCabe
A. M. Fayon
D. Garbarini

TOTAL P.05

BEFORE THE REGIONAL ADMINISTRATOR

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 Federal Plaza
New York, New York 10278

In the Matter of :

S.M.S. Instruments, Inc. :

Uncontrolled Hazardous Substance:
Release Facility, :

Deer Park, New York :

ADDENDUM TO
COMMENTS IN RESPONSE TO
EPA's PROPOSED
REMEDIAL ACTION PLAN

ADDENDUM TO COMMENTS, SUGGESTIONS AND OBJECTIONS OF SMS INSTRUMENTS, INC. ON EPA REGION II's PROPOSED REMEDIAL ACTION PLAN

PLEASE TAKE NOTICE that SMS Instruments, Inc., appearing through its counsel, Kreindler & Kreindler, Henry Gluckstern, of counsel, hereby submits the following addendum to its comments initially submitted August 11, 1989 with respect to EPA's Final Remedial Investigation Report and Final Feasibility Study, respectively dated February 1989 and June 1989, for the SMS Instruments, Inc. uncontrolled hazardous substance release facility, Deer Park, New York (hereinafter, "the facility").

The facility owner hereby requests that EPA take the following additional information into consideration prior to finalization of its Remedial Action Plan for the facility. The additional observation and comment expressed herein was brought to the attention of the facility owner by a consultant during the week of August 28, 1989 and was therefore not submitted as part of the facility owner's August 11, 1989 submittal.

48

While the comment herein submitted does not directly impact on remedy selection issues, SMS Instruments, Inc. nevertheless believes that the failure of the Final Remedial Investigation Report and Final Feasibility Study to have taken into account the information contained herein constitutes a serious deficiency of documents which repeatedly identify activities conducted at SMS Instruments, Inc. as the exclusive source of certain pollutants claimed to have been detected on property owned by SMS Instruments, Inc..

Specifically, consultants for SMS Instruments, Inc. have noted, as part of a just-completed site inspection, that property operated by Applied Coating, Inc./Margin International, located immediately to the south of SMS Instruments, Inc.'s property, at 90 Marcus Boulevard, shows visible and long-established evidence of the release of organic substances to the environment. In addition, the property at 90 Marcus Boulevard is so configured that hazardous substances which may have been released in the vicinity of the loading dock at the eastern perimeter of the Applied Coating, Inc. facility structure would flow above ground onto property owned by SMS Instruments, Inc. to a point essentially co-terminus with the area in which groundwater was sampled by EPA's contractor's wells placed in the location of the former SMS Instruments, Inc. leaching field.

In addition, a piped, below-grade dry well (leaching) field maintained by the owner or operator of 90 Marcus Boulevard terminates at a point within 2 (TWO) feet from the point at which the releases alleged to have originated from the SMS Instruments, Inc. leaching field were sampled through monitoring wells installed by EPA's contractor.

Nowhere does the Final Remedial Investigation Report or Final Feasibility Study discuss the impact which such an obvious foreign source of contamination would have on groundwater sampled physically on property of SMS Instruments, Inc.. SMS Instruments, Inc. believes that conclusions drawn from sampling which EPA found to contain one of the major contaminant concentrations on the SMS Instruments, Inc. site, but which failed to mention, let alone investigate and analyze, possible significant contributions from an otherwise "downgradient" source of contamination, makes any conclusion identifying SMS Instruments, Inc. as the sole source of contamination found along the southern portion of the SMS facility seriously suspect.

SMS Instruments, Inc. respectfully requests and petitions the Regional Administrator to re-evaluate the portion of EPA's RI/FS dealing with the origin of contaminants detected in the area of the SMS Instruments, Inc. leaching field and further requests that the role of the owners and operators of 90 Marcus Boulevard as potentially responsible parties for releases to the environment allegedly occurring from 120 Marcus Boulevard be fully and properly assessed prior to any final determination being made of potentially responsible parties at the SMS Instruments, Inc. facility.

Respectfully submitted,

DATED: September 5, 1989

Henry Gluckstern

KREINDLER & KREINDLER
Attorneys for SMS Instruments,
Inc.
100 Park Avenue
New York, New York 10017
212-687-8181

APPENDIX V

RESPONSIVENESS SUMMARY

FINAL RESPONSIVENESS SUMMARY
SMS INSTRUMENTS SITE
DEER PARK, NEW YORK

The U.S. Environmental Protection Agency (EPA) held a public comment period from July 10, 1989 through August 10, 1989 for interested parties to comment on EPA's final Remedial Investigation/Feasibility Study (RI/FS) and Proposed Remedial Action Plan (PRAP) for the SMS Instruments Site, located in Deer Park, New York.

EPA held a public meeting at 7:00 pm. on August 2, 1989 at the Deer Park Library in Deer Park, New York to outline the remedial alternatives described in the RI/FS and present EPA's proposed remedial alternatives for the SMS Instruments Site.

The responsiveness summary is required by Superfund policy. It provides a summary of citizen's comments and concerns received during the public comment period, and EPA's responses to those concerns. All comments summarized in this document have been factored into EPA's final decision for selection of the remedial alternatives for cleanup of the SMS Instruments Site.

This responsiveness summary is organized in five sections. Each of these sections is described briefly below.

I. **RESPONSIVENESS SUMMARY OVERVIEW.** This section briefly describes the background of the SMS Instruments Site and outlines the proposed remedial alternatives for the Site.

II. **BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS.** This section provides a brief history of community concerns and interests regarding the SMS Instruments Site.

III. **SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO THESE COMMENTS.** This section summarizes oral comments received by EPA at the August 2, 1989 public meeting and provides EPA's responses to these comments.

IV. **REMAINING CONCERNS.** This section discusses community concerns to be considered as EPA prepares to undertake the remedial designs and remedial actions at the SMS Instruments Site.

V. **WRITTEN COMMENTS RECEIVED BY EPA AND EPA RESPONSES TO THESE COMMENTS.** This section contains the written comments received by EPA during the public comment period, and EPA's written responses to these comments.

I. RESPONSIVENESS SUMMARY OVERVIEW

The SMS Instruments Site is located at 120 Marcus Boulevard, Deer Park in Suffolk County, New York. It is in a light industrial and residential area. The site is an active industrial facility that consists of a 34,000 square foot building on a 1.5 acre lot. Approximately 80% of the lot is paved with asphalt. More than 50 industrial facilities are located within a one-mile radius, and a large groundwater recharge basin is located directly adjacent to the east side of the SMS Instruments Site.

EPA conducted a Remedial Investigation (RI) from July 1987 to May 1989 to characterize the extent and nature of contamination of the site. The RI found extensive soil and groundwater contamination at the site. The major source of groundwater and soil contamination is believed to be industrial waste generated from metal degreasing and other metal finishing operations conducted from 1967 to the present. These wastes were routinely discharged to a leaching pool on the south side of the building until 1980. Another source was a 6,000 gallon underground storage tank used for jet fuel storage. The leaching pool was pumped out, filled with sand, and sealed in 1983. The underground tank was removed from the site by the owner on February 17, 1988 during the RI.

The results of the RI are summarized below:

- **Groundwater Contamination**
  - Groundwater below the site is highly contaminated. The chemicals of concern are mainly chlorinated hydrocarbons and some aromatics, such as xylenes.
  - Groundwater upgradient of the site is contaminated with volatile organic compounds (VOCs).
  - Contamination in the soil is continually released into the groundwater. Levels of contamination indicate that groundwater treatment will be required in the upper glacial aquifer.
- **Soil Contamination**
  - Gross contamination of surface and subsurface soils is present around the leaching pool and underground storage tank areas.

- The primary soil contaminants include xylene, chlorobenzene, ethylbenzene, trans-1,2 dichloroethene, and tetrachloroethene.

The remedial alternatives evaluated by EPA in the Feasibility Study are summarized in the following section. The final alternative has been selected after evaluating public comments and any other additional information gathered during the public comment period on the RI/FS and the Proposed Remedial Action Plan.

Cleanup alternatives have been selected to address groundwater and soil remediation. The alternatives for groundwater cleanup are categorized as management of migration alternatives. Alternatives for remediating contaminated soils are categorized as source control alternatives. The alternatives for these two categories are as follows:

MANAGEMENT OF MIGRATION ALTERNATIVES

Alternative 1a: No Action (source untreated)

Capital Cost:	$70,400
Annual Operations and Maintenance (O&M):	$13,600
Periodic O&M:	$ 7,500
Construction Time Frame:	45 Days
Restoration Time Frame:	More than 20 Years

No remedial action would be implemented under this alternative. A long-term monitoring program would be conducted to provide information on the extent of contaminant migration over time. Five wells would be monitored semi-annually for volatiles, semi-volatiles, and various metals. This alternative would require the implementation of water use restrictions to prevent the use of contaminated groundwater as a potable water source. The restrictions would be imposed on any residence, business or future plans for well installations within one-half mile downgradient of the site.

Alternative 1b: No Action (source treated)

Capital Cost:	$70,400
Annual O&M:	$13,600
Periodic O&M (Every 5 Years):	$ 7,500
Construction Time Frame:	150 Days
Restoration Time Frame:	10 Years

This alternative is the same as Alternative 1a, except that the source would be treated by one of the four alternatives: 4A, 4B, 5 or 6. If source treatment is implemented the aquifer restoration time frame would be reduced by approximately 10 years.

Alternative 2a: Groundwater Extraction, Treatment and Discharge (source untreated)

Capital Cost:	$544,100
Annual O&M:	$128,200
Periodic O&M:	$ 7,500
Construction Time Frame:	45 Days
Restoration Time Frame:	More than 15 Years

An extraction well located off-site would capture the plume of contaminated groundwater emanating from the SMS Instruments Site. The extracted groundwater would treated in air stripping towers to reduce the level of contamination to meet or exceed the selected cleanup standards. The treated water would then be discharged to a surface water body, specifically, the pond in Birchwood Park, 1/2 mile southeast of the site.

Alternative 2b: Groundwater Extraction, Treatment and Reinjection (source treated)

Capital Cost:	$365,300
Annual O&M:	$123,400
Periodic O&M (Every 5 Years):	$ 7,500
Construction Time Frame:	45 Days
Restoration Time Frame:	4 Years

This alternative is the same as alternative 2a, except that the source would be treated by one of the four alternatives: 4a, 4b, 5 or 6 and the groundwater would be reinjected through wells located on-site. The restoration time frame would thereby be significantly reduced as a result of concurrent source treatment. This is EPA's preferred alternative for treating the contaminant migration

SOURCE CONTROL ALTERNATIVES

Alternative 3: Source Control -- No Action

Capital Cost:	$73,200
Annual O&M:	$14,100
Periodic O&M (Every 5 Years):	$14,600
Construction to Completion of Cleanup:	90 Days

Implementation of this alternative would be achieved by incorporating monitoring and land use/deed restrictions on the site. The elements necessary for its implementation are: Installing monitoring wells; Obtaining land use and deed restrictions; Sampling of groundwater from monitoring wells periodically; Sampling subsurface soils periodically; Patching and sealing of asphalt pavement above the source areas; and Reviewing the site conditions after five years.

Alternative 4a: Source Removal and Off-Site Disposal

Capital Cost: $520,200
Annual O&M: 0
Construction to Completion of Cleanup: 30 Days

This alternative would involve the excavation and off-site disposal of the contaminated soil present at the former leaching pool and underground storage tank areas. Approximately 1,250 cubic yards of soil contaminated with volatile and semi-volatile organics would be excavated and transported to an off-site Federally approved landfill for disposal.

Prior to excavation of the contaminated soil, the existing pavement would be removed, loaded into covered trucks and transported to a debris landfill for disposal. If necessary, the pavement would be decontaminated before being transported off-site or transported to an off-site Federally approved landfill.

If this remedy can be implemented prior to November 1990, when the new Land Band Regulations go into effect, no treatment of the soil will be required prior to disposal. However, after that date, the treatment of soil would be required before disposal.

Alternative 4b: Source Removal and Off-Site Incineration

Capital Cost: $2,036,500
Annual O&M: 0
Construction to Completion of Cleanup: 30 Days

This alternative would involve the excavation of contaminated soil described in Alternative 4a. Once the contaminated soil is excavated, it would be placed in fiber drums. Each fiber drum would be filled with approximately 300 pounds of contaminated soil. The drums would be loaded onto trucks and transported to an off-site incinerator. To determine costs, EPA assumed that an incinerator in Bridgeport, Logan Township, New Jersey would be used. The excavated areas would be backfilled with clean soil.

Alternative 5: Low Temperature Soil Stripping

Capital Cost: $629,800
Annual O&M: $14,000
Periodic O&M: $14,000
Construction to Completion of Cleanup: 70 Days

Contaminated soil would be excavated as described in Alternatives 4a and 4b. It would then be stockpiled in an area adjacent to the treatment unit where it would be fed into a screen to remove oversized (greater than a 2 inch diameter) material and debris. The screened material would be transported to use on-site as backfill. The vaporized contaminants could either be destroyed through a secondary high-temperature combuster or collected through condensate or adsorbed onto activated carbon. Stack emissions would be monitored to verify compliance with Federal and State regulations, including those for volatile organic compounds (VOCs), hydrogen chloride (HCL), carbon monoxide (CO) and particulates.

Prior to backfilling the treated soil, the soil would be tested using the Toxic Characteristic Leaching Procedure (TCLP) to ensure that land disposal levels are achieved. At this point in time it cannot be determined whether these levels can be achieved. If levels cannot be achieved, a treatability variance may be required. Unless the material is delisted (i.e. certified as non-hazardous), the material would have to be covered in accordance with Federal landfill closure requirements. Monitoring would also be required.

Alternative 6: In-Situ Steam Stripping

Capital Cost:	$386,800
Annual O&M:	0
Construction to Completion of Cleanup:	150 Days

A typical *in situ* steam stripping system would involve the introduction of steam into the contaminated soils, followed by air and vapor extraction using vacuum pumps. In order to comply with air emission requirements, an aboveground vapor phase treatment unit would be required to remove organics from the off gases. Spent carbon from the treatment unit would be treated and disposed as hazardous waste. Due to the close proximity of the two on-site sources (underground storage tanks and leaching pool area), one common aboveground injection system, extraction system, and vapor phase separation system would be used. After organic emission rates have decreased to negligible levels, soil samples would be collected to confirm that soil contaminant-specific action levels are achieved. Upon completion of the in-situ steam stripping operations, all equipment would be decontaminated and removed from the site. Wastes generated during decontamination would be collected and transported to a licensed facility for treatment and disposal.

The soil conditions at the SMS Site (homogeneous, have a high porosity, and clay lenses are absent) are ideally suited for steam stripping. A study at a Superfund site in San Jose, California conducted by the University of California at Berkeley, showed that the organics in soil were reduced by as much as 99.3% and at a rate forty times faster than air stripping. EPA would conduct a volatilization pilot study before the actual remediation. If any difficulties are encountered implementing this alternative, the same equipment can be used to treat the soil with air only. The latter process is a proven technology and has been used successfully during actual remediation. This is EPA's preferred alternative for source control.

Evaluation of Alternatives

EPA's selection for remediation at the SMS Instruments Site is based on the requirements of CERCLA, which provides that a selected site remedy be protective of human health and of the environment, cost effective, and in accordance with other statutory requirements.

EPA policy also emphasizes permanent solutions incorporating on-site remediation of hazardous waste contamination whenever possible.

EPA's final decision on the remedial alternative is documented in the Record of Decision (ROD). The public will be kept informed of the ROD through a press release and fact sheet that will be distributed to recipients on the current mailing list. The fact sheet will also be placed with a copy of the ROD at the information repositories developed for the site. The information repositories are documented in Appendix C.

II. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

There was high public concern regarding the SMS Instruments Site in 1984 when the site was first nominated by the State of New York for inclusion on the National Priorities List (NPL). About the same time, the New York Citizen Action Network (NYCAN) began canvassing in Deer Park for funds. The Deer Park Community Action Network, an organization associated with NYCAN, sponsored several meetings. In the summer of 1984 a "Community Health Forum" was held and approximately 120 citizens attended.

Community interest declined from the summer of 1984 to the present. According to local officials and residents who were interviewed, the major reason for the reduced level of community concern was the announcement that EPA had officially designated the site as a Federal Superfund site and that a cleanup would be conducted.

Levels of public concern have recently risen due to concerns about the effectiveness of the preferred alternatives recommended by EPA for cleanup of the SMS Instruments Site. The primary concerns of residents and local officials as cited in the Community Relations Plan are as follows:

- There is a general concern about protecting groundwater resources and the potential for regional groundwater contamination.

- Residents are concerned about the length of time from the initial site discovery to the completion of the final remedy at the SMS Instruments Site.

- Businesses surrounding the site are concerned with the potential disruption of daily business activities during remediation of the site.

- Officials, civic leaders, and residents stated that they would like EPA to inform them of all EPA meetings and site activities.

- Local officials raised concerns about the potential negative effects on property values.

III. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO THESE COMMENTS

Oral comments raised during the August 10, 1989 public meeting and comments received during the public comment period for the SMS Instruments Site remediation are summarized below. The public comment period was held from July 10, 1989 through August 10, 1989. Comments received during this time were organized into three categories: Technical Questions/Concerns; Cost/Funding Issues; and Health Risk Assessments.

TECHNICAL QUESTIONS AND/OR CONCERNS RAISED AT AUGUST 2, 1989 PUBLIC MEETING

COMMENT: One resident was interested in the process EPA used to determine the effects the reinjection system would have on the recharge basin and if the reinjection system was implemented, would there be any detrimental effects on the recharge basin.

EPA's RESPONSE: EPA replied that groundwater modeling was used to determine the effects of the reinjection system. EPA also stated that groundwater modeling indicated that the reinjection system would not have detrimental effects on the recharge basin. The location of the wells would be far enough away that when the basin is recharging, which it normally does, there would be enough force to drive the newly injected water past the recharge basin. In addition, EPA would conduct further tests during the Remedial Design phase to delineate groundwater flow characteristics. This information would be used to define EPA's present choice for the location of the extraction wells, reinjection wells and/or the size of the air stripper.

COMMENT: One resident wanted to know the size of the reinjection wells.

EPA's RESPONSE: EPA stated that details of the remedy would be finalized during remedial design but current plans call for reinjection wells to be six inches in diameter. The wells would be screened at 20-30 feet below the water table.

COMMENT: Several residents inquired whether the water would be tested for contaminants prior to reinjection.

EPA's RESPONSE: EPA stated that the water would be monitored prior to reinjection. The treated groundwater would only be reinjected if monitoring results met cleanup standards.

COMMENT: A resident noted that EPA had stated there were a number of volatile and semi-volatile contaminants in the soil and groundwater. The resident asked if EPA also found inorganics such as metals in the soil and/or groundwater.

EPA's RESPONSE: EPA responded that it found levels of chromium and lead in on-site soils and in groundwater. The representative values for the concentration levels of chromium and lead detected in the groundwater on-site were 23 and 33.0 micrograms/liter, respectively. Concentrations of these chemicals in the extracted groundwater are not expected to exceed ARARs. Similar concentrations of these metals were found both downgradient and upgradient of the site. This indicated, there was not a "hot-spot" of the metals on the SMS Instruments Site.

COMMENT: One resident wanted to know what method EPA proposed to filter metals such as iron from the groundwater at the site.

EPA's RESPONSE: EPA stated that a multi-media filtration process would remove the iron from the groundwater to meet the action specific ARAR levels.

COMMENT: One resident asked why EPA prefers the in-situ steam stripping alternative for soil remediation.

EPA's RESPONSE: EPA indicated that, because of the sandy nature of the soil, steam stripping would be an innovative, effective technology, permitting rapid, effective transmission of the stream through the soil. If the soils contained a lot of clays or finer silts, this method might not be effective.

COMMENT: A citizen inquired whether the in-situ steam stripping method for soil remediation has ever been used before.

EPA's RESPONSE: EPA replied in-situ air stripping has been successful at Superfund sites. Steam stripping is an innovative variation of a technology that has been tested at the University of California at Berkeley. The test results showed steam stripping could be completed forty times faster than air stripping given the soil conditions at the site.

COMMENT: Several residents were concerned that the steam stripping alternative was selected because it is one of the less expensive alternatives presented by EPA.

EPA's RESPONSE: EPA agreed that this alternative was one of the least expensive alternatives it presented. However, EPA responded by assuring residents that the alternative would be protective of public health and the environment and would provide the best balance of the nine Superfund criteria evaluated to select a remedial alternative. This is consistent with statutory requirements of CERCLA for utilization of permanent solutions and alternative treatment technologies to the maximum extent practicable.

The nine criteria used to evaluate remedial alternatives include: overall protection of human health and environment; compliance with ARARs; long-term effectiveness; substantial reduction of toxicity, mobility, or volume of contaminants; short-term effectiveness; implementability; cost; state acceptance; and community acceptance. A discussion of these criteria is documented in the Feasibility Study Report and the ROD, which can be reviewed at the information repositories. The location of the information repositories is listed in Appendix C.

COST/FUNDING ISSUES

COMMENT: A resident asked who is going to pay for the cleanup.

EPA's RESPONSE: In general, EPA replied where viable PRP's exist, they are offered the option of paying for the cleanup and/or may be required to perform the cleanup. EPA has used federal Superfund monies for the RI/FS at the SMS Instruments Site. In the event that the PRP here does not perform or fund the selected remedy, EPA will pay 90% of the cost and the state will pay for the remaining 10%. EPA may also pursue legal action for cost recovery.

COMMENT: One resident wanted to know if the PRP was paying for the cleanup, would EPA have chosen another, more expensive alternative.

EPA's RESPONSE: EPA responded that the preferred alternatives were based on nine criteria EPA uses for selecting remedial alternatives for all Superfund Sites and that the remedy selection would not be different.

COMMENT: One resident inquired whether the PRP will eventually have to pay for damages at the site.

2. WRITTEN COMMENTS RECEIVED BY EPA

The Office of Regional Counsel and the Emergency and Remedial Response Division have reviewed comments received from Mr. Gluckstern's dated August 11, 1989 and September 5, 1989 (letters attached). It should be noted that both sets of comments were reveived after the August 10, 1989 closing date for public comment. Mr. Gluckstern did, however, receive a four day extension from EPA to respond. Therefore, only the second set of comments were late.

A. Response to August 11, 1989 Gluckstern Letter

Response to Comment 3.a.

This comment suggests that EPA's implemention of the selected remedy will not meet the requirements of Section 121(b)(1) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9621 (b)(1) and that costs incurred by EPA are therefore not recoverable. Section 9621(b)(1) requires that remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants and contaminants is a principal element, are to be preferred over remedial actions not involving such treatment. This Section also requires EPA to assess alternative treatment technologies and select a cost effective remedy that is protective of human health and the environment.

EPA maintains that the remedy selected, and the contingency remedy employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances as its principal element. The volume and toxicity of hazardous substances at the Site will be reduced by in situ steam stripping of contaminated soils and groundwater extraction, treatment and reinjection. Volatile Organic Compounds ("VOCs") will be removed to an average level of 10 ppb, a reduction of more than 99% of comtaminant levels in the soil. The groundwater will be remediated to meet Federal or State drinking water levels, except in those cases where upgradient concentrations are above such standards. In such a case, the contaminants will be reduced to upgradient levels so as to eliminate any significant contribution from the SMS Site.

The selected remedy, as well as the contingency remedy, represent the maximum extent to which permanent solutions and alternative treatment technologies can be used in a cost-effective manner for the SMS Site. In situ steam stripping and hot air soil stripping are innovative technologies. Both are cost effective when compared to other permanent treatment alternatives. Based on the ROD and the above explanation, EPA maintains that the requirements of §9621(b)(1) are satisfied and that EPA costs associated with the Remedial Design/Remedial Action at this Site are fully recoverable pursuant to §9607(a).

Response to Comment 3.b.

This comment suggests that EPA's implemention of the selected remedy does not comply with Section 121(d)(1) of CERCLA, is inconsistent with this Section and that costs incurred by EPA are therefore not recoverable. Section 121(d)(1) requires that the remedial action selected by EPA attain a degree of cleanup of hazardous substances, pollutants and contaminants released into the environment and of control of further release at a minimum which assures protection of human health and the environment. This Section also requires such remedial actions be relevant and appropriate under the circumstances presented by the release or threatened release.

The selected remedy and the contingency remedy outlined in the ROD eliminate all outstanding threats posed to the groundwater by the on-site contaminated soils. Both remedies reduce contamination of on-site materials to health based levels except in those cases where upgradient concentrations exceed those levels. The remedy for the second operable unit will identify and address any upgradient contamination.

Based on the ROD and the rest of teh administrative record, EPA maintains that the requirements of §9621(d)(1) are satisfied and that EPA costs associated with the Remedial Design/Remedial Action at this Site are fully recoverable pursuant to §9607(a).

Response to Comment 3.c.

This comment suggests that EPA's implemention of the selected remedy will not comply with Section 9621(d) of CERCLA and is inconsistent with this Section and that costs incurred by EPA are therefore not recoverable. Section 9621(d) requires that EPA consider the designated or potential use of the surface or groundwater, the environmental media affected, the purposes for which such criteria were developed and the latest information when deciding whether or not water quality criteria under the Clean Water Act are relevant and appropriate under the circumstances of the release or threatened release. This Section also outlines criteria for establishing alternate concentration limits to those otherwise applicable for hazardous constituents.

The specific remedial action objectives for this Site include the restoration of groundwater quality to its intended use as a potential source of drinking water by reducing contaminant levels below State and Federal drinking water standards where possible. In the case where upgradient contributions prohibit such restoration for a peticular compound, the contaminent level will be reduced to the upgradient level. None of the residents in the vicinity of the Site rely on private wells for potable water. The nearest public well is located approximately one mile southwest and downgradient from the Site. Since the Site is located over a deep recharge zone, there is the potential for cross-contamination of the Magothy aquifer, which is the primary source of drinking water for this area. The possibility of contaminating the recharge basin and driving the contaminants into the Magothy aquifer will be prevented by placing the reinjection wells into a relatively clean upper aquifer and installing several reinjection wells, so that the treated water will be distributed over a larger area. This will eliminate the excessive re-injection flow and will also prevent the creation of a downward gradient.

Based on the ROD and the above explanation, EPA maintains that the requirements of §9621(d)(2)(B) have been considered and that EPA costs associated with the Remedial Design/Remedial Action at this Site are fully recoverable pursuant to §9607(a).

Response to Comment 3.d.

This comment suggests that EPA's implemention of the selected remedy fails to consider and implement Section 121(d)(4)(E) of CERCLA and that costs incurred by EPA are therefore not recoverable. Section 121(d)(4)(E) enables EPA to select a remedial action that does not attain a State standard where the State has not consistently applied the standard.

The basis for this comment is unclear. The commenter did not identify any particular state standard which it believes EPA is applying or not applying here but which New York State has not consistently applied. The selected remedial action and the contingency remedy, when complete, will meet ARARs as specified in the ROD. EPA maintains that the requirements of §121(d) are being complied with here and that EPA costs associated with the Remedial Design/Remedial Action at this Site are fully recoverable pursuant to §9607(a).

Response to Comment 3.e.

This comment suggests that EPA's implemention of the selected remedy fails to consider and implement Section 9621(d)(4)(F) of CERCLA and that costs incurred by EPA are therefore not recoverable. Section 121(d)(4)(F) enables EPA to select a remedial action that does not attain ARARs where the remedial action is to be paid for by the Hazardous Substance Superfund (the "FUND") and the selection of a remedial action that attains ARARs will not provide a balance between the need to protect public health, welfare and the environment and the availabliity of amounts from the Fund to respond to other sites which prevent a threat to public health, welfare or the environment.

The selected remedial action and the contingency remedy, when complete, will comply with applicable or relevant and appropriate environmental standards set forth in the ROD. In selecting the remedial action for this site, it was not necessary for EPA to apply less stringent cleanup standards in order to increase the availablilty of amounts from the Fund to respond to other sites. EPA maintains that the requirements of §121(d) are being complied with here that EPA costs associated with the Remedial Design/Remedial Action at this Site are fully recoverable pursuant to §9607(a).

Response to Comment 3.f.

This comment suggests that the selected remedial action is inconsistent with the National Oil and Hazardous Substance Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300 and that costs incurred by EPA in implementing the remedy are therefore not recoverable. As is the case with respect to many of the commenter's other comments, no basis is provided for this comment. The comment simply makes a conclusory statement without identifying particular provisions of the NCP with which the selected remedy is allegedly inconsistent.

EPA maintains that the selected Remedial Action has been chosen in accordance, to the extent practible, with the NCP and that EPA costs associated with the Remedial Design/Remedial Action at this Site are fully recoverable pursuant to §9607(a).

Response to Comments 4, 5, and 6

EPA believes that the basis for calculating the pumping rates outlined in the ROD is reasonable. In addition, a margin of safety is built in to ensure that the plume is captured. Additional pumping tests during the remedial design phase will yield data by which a more accurate estimate of the pumping rates can be obtained (see Feasibility Study report of June 1989, page 61). EPA would like to see any documentation of calculations for the pump rates set forth in the August 11, 1989 comments.

Response to Comments 7.a. and 7.b.

The possibility of contaminating the recharge basin and driving contaminants into the Magothy aquifer will be prevented by placing the reinjection wells into a relatively clean upper aquifer area and installing several reinjection wells, so that the treated water will be evenly distributed over a larger area. This will eliminate the excessive re-injection flow and will also prevent the creation of a downward gradient as mentioned in Comment 7.b.

Response to Comment 8

All reinjected groundwater will be below ARARs.

Response to Comment 9

Prior to groundwater reinjection, the iron will be removed through multimedia filters. There are many ways of doing this, (e.g. pH change, flocculation, etc.). At any rate, the reinjection groundwater will meet ARARs.

Response to Comment 10

The value of 1.1 ppb of trans-1,2-dichloroethene is the equilibrium value as calculated from partition coefficients. The actual value to achieve groundwater standards will be in the vicinity of 10 ppb as specified in the ROD, but this can only be established during permeability studies. One cannot compare the contaminants in the soil to that of the groundwater on a one to one basis. The former values are given on a mass basis, whereas the latter are expressed as mass per volume. The detection limit for VOCs is less than 1 ppb.

Response to Comment 11

Originally the source of contaminants existed above the water table. The model used this initial condition to simulate the source of contaminants currently in the glacial aquifer. Analytical results during the remedial investigation were used to calibrate the groundwater model. The predicted results were consistent with actual data. Natural attenuation, such as dilution and degradation have not been considered in determining the soil action levels. However, adsorption and dispersion have been modeled to determine contaminant plume concentration. The value of 1.1 ppb of trans-1,2-dichloroethene is the equilibrium value calculated from the partition coefficient. See response to Comment 10 above.

Response to Comments 12 and 13

Since most of the site is paved, volatilization of VOCs will be minimal. It is unlikely that there will be a substantial upward migration of the contaminants from the groundwater through the soils to the surroundings. Specific cleanup levels for the contaminated soils on site will be established during the remedial design of the remedy. These action levels will be established using site-specific information generated during the treatability studies. It is envisioned that the establishment of such levels will consider attenuation and dilution of contaminants and the impact of such factors on the loading to the groundwater.

Response to Comment 14

The private wells mentioned in this comment are downgradient of the site, not upgradient. The second operable unit will address upgradient sources of contamination.

Response to Comments 15 through 17

Since offsite contamination upgradient of the SMS Instruments site is suspected to be contributing to the groundwater contamination at the site, a second operable unit will be initiated to investigate those sources and alternatives for their remediation. This will also identify additional PRPs if any and may also provide additional information regarding SMS's contribution to the groundwater contamination in the area. The upgradient concentration of trans-1,2 dichloroethene has been incorporated into Table 1 of the ROD and was considered when selecting the remedy.

Response to Comments 18, and 19

In conducting the remedial action, EPA must meet specific action levels including Safe Drinking Water Act Maximum Contaminant Levels (40 CFR 141.11-141.16) outlined in the ROD which are not based on classes or categories of compounds, but rather on specific chemicals.

Response to Comment 20

Since this a Superfund site located in New York State, and because the groundwater at the site is classified as IIb, the drinking water standards established by New York State are ARARs and should be adhered to unless a waiver is justified. Due to the existence of an upgradient source, the remedial action selected will not meet chemical-specific ARARs or be capable of restoring the area groundwater to applicable groundwater quality standards. The upgradient source area will be addressed as part of the second operable unit.

Response to Comment 21

As mentioned before, the remedial design study will yield additional data, by which a more accurate design of the treatment system can be obtained. See also response to Comment 3.c. It is EPA and NYSDEC policy to remedy groundwater classified as a Class I or II aquifer. If treated, the upper aquifer could be used as a potable water source.

Response to Comment 22

Treatability studies will be conducted to determine the time and effectiveness involved in the soil remediation. The capital cost for soil remediation via air stripping will be similar or slightly lower than the one using steam as a stripping agent. The estimated 9 month remediation time for air stripping is longer than the five month estimated time for steam stripping.

Response to Comments 23 and 24

The remediation times are approximate and provide for reasonable margins of error. The remediation time of 29.5 years mentioned in Comment 24 assumes a 1400 ppb trans-1,2 dichloroethene concentration throughout the plume. This contaminant concentration is a "hot spot"; it was detected in one location. EPA's calculations were performed using a representative value of 580 ppb. The remediation times specified in the ROD are therefore reasonable.

Response to Comments 25 and 26

The 4 years remediation time for the selected remedy as predicted by groundwater modeling are based on best available current data. New data to be obtained during the remedial design and additional groundwater modeling will yield better data by which a more accurate estimate of the remediation time can be made. EPA believes that remediation times as indicated in the PRAP are fairly accurate. The No-Action option cannot be selected, since it will take an unacceptable amount of time, well over 20 years, for the groundwater to reach health based levels. EPA is required to remedy the soil as well as the groundwater to protect human health and the environment. The selected remedy will achieve this goal.

Response to the Concluding Section

EPA believes that the calculated pumping rates, soil action levels to achieve groundwater ARARs, remediation times, capital and present worth costs, operation and maintenance costs are reasonable based on the data obtained during the remedial investigation conducted at the site. However, the RI/FS is not intended to be a design document and as such these estimates may be refined during the design stage of the remedial action.

B. RESPONSE TO SEPTEMBER 5, 1989 LETTER

A second operable unit is planned which will address suspected upgradient sources of contamination.

EPA's RESPONSE: EPA stated that, through administrative and/or legal actions, EPA may attempt to recover the costs of both the study and the cleanup from the Potentially Responsible Party (PRP).

COMMENT: A citizen asked EPA what the estimated cost is for the site cleanup.

EPA's RESPONSE: EPA estimates that, at this time, remediation would cost 1.1 million dollars.

HEALTH/RISK ASSESSMENT

COMMENT: Several residents were concerned whether private wells were affected by the contamination and to what extent private well water could be used.

EPA's RESPONSE: EPA responded that private well owners 1/2 mile south of the site should be aware that their wells are within the areas of concern. Private wells drawing water from the upper glacial aquifer, 30-50 feet deep, which are not generally used for drinking water, are likely to be contaminated. EPA also stated that private wells within 1/2 mile downgradient of the site are not considered potable water sources. According to the Department of Health, all residents and businesses in the vicinity of the site are served by public water. If residents choose to maintain private wells, they should do so for irrigation purposes and not as a source of drinking water.

COMMENT: A citizen inquired whether the air emissions levels will be within current State and Federal regulatory standards using the in-situ steam stripping method.

EPA's RESPONSE: EPA stated that in order to comply with air emission requirements, an above ground vapor-phase treatment unit would be used to remove organics from the emissions. Spent carbon would be treated and disposed of an approved hazardous waste facility.

IV. REMAINING CONCERNS

Citizens and local officials remain concerned about the innovative aspects of the in-situ steam stripping technology. The citizens' greatest concern was the possibility of unexpected problems associated with this method and stressed their concern that it could cause extensive delays in site remediation.

COMMENT: A concerned citizen asked if the steam stripping alternative proves unsuccessful, does EPA have an alternate remediation plan to avoid further cleanup delays.

EPA's RESPONSE: Innovative air stripping has proven successful on Superfund sites. Therefore, EPA does not expect steam stripping to be unsuccessful. In the event that steam stripping is unsuccessful, stripping of the soil with air could be performed with the same equipment. Since the residents were concerned with potential problems with both air and steam stripping, EPA has decided to incorporate a contingency plan into the remedy selections. EPA has selected Alternative 4b (Source Removal and Off-Site Incineration) as a contingency remedy. This contingency remedy would eliminate any unnecessary delays in the remediation at the SMS Instruments Site and would still achieve remediation of the soils.

V. WRITTEN COMMENTS RECEIVED BY EPA AND EPA RESPONSES TO THESE COMMENTS.

This section contains the written letters received by EPA during the public comment period, and EPA's written responses to these comments.

AUG 1 6 1989
Kissel

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August 11, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Elena Kissel, Esq.
Assistant Regional Counsel
United States Environmental Protection Agency
26 Federal Plaza
New York, New York 10278

Re: S.M.S. Instruments, Inc. Uncontrolled Hazardous Substance Facility; Comments, Suggestions and Objections of SMS Instruments, Inc. on EPA's RI/FS and Proposed Remedial Action Plan dated 7/14/89

Dear Ms. Kissel:

Enclosed please find triplicate counterpart originals of SMS Instruments, Inc.'s comments, suggestions and objections to the RI/FS and Proposed Remedial Action Plan.

Once the Agency has formulated its responses to the comments considered during the comment period, I would appreciate, and am now requesting, an opportunity to review the entire Agency administrative file on SMS Instruments, Inc. prior to the Record of Decision being sent to the Regional Administrator for his consideration. Please write me to suggest some times and a location where I can perform such a review.

Sincerely yours,

KREINDLER & KREINDLER

Henry Gluckstern

By: Henry Gluckstern

Enclosures

HG:mm

BEFORE THE REGIONAL ADMINISTRATOR

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION II
26 Federal Plaza
New York, New York 10278

In the Matter of :

S.M.S. Instruments, Inc. :

Uncontrolled Hazardous Substance: **COMMENTS IN RESPONSE TO**
Release Facility, **EPA's PROPOSED**
: **REMEDIAL ACTION PLAN**

Deer Park, New York

:

COMMENTS, SUGGESTIONS AND OBJECTIONS OF SMS INSTRUMENTS, INC. ON EPA REGION II's PROPOSED REMEDIAL ACTION PLAN

PLEASE TAKE NOTICE that SMS Instruments, Inc., appearing through its counsel, Kreindler & Kreindler, Henry Gluckstern, of counsel, hereby submits its comments with respect to EPA's Final Remedial Investigation Report and Final Feasibility Study, respectively dated February 1989 and June 1989, for the SMS Instruments, Inc. uncontrolled hazardous substance release facility, Deer Park, New York (hereinafter, "the facility").

By submitting these comments, SMS Instruments, Inc. neither admits nor acknowledges that it is the source of contaminants allegedly identified on property it currently owns in Deer Park, New York. Furthermore, SMS Instruments, Inc. admits no liability to the United States or to any other entity for any condition alleged to currently constitute a release to the environment of hazardous substances, pollutants or contaminants under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 et seq., identified in connection with property it owns in Deer Park, New York. Moreover, SMS Instruments, Inc. denies that any condition occurring on its property presents an imminent and substantial endangerment to human health, welfare or the environment.

SMS Instruments, Inc. reserves all rights to further comment upon or object to actions taken by the United States at its facility as permitted by law, regulation or Agency practice, and to defend against any claims made with respect to such alleged releases of hazardous substances, pollutants or contaminants or to any claims made for costs alleged to have been incurred by the United States or any other entity in removing, remedying, or otherwise responding to any such alleged releases.

Comments, Suggestions and Objections With Respect to EPA's Proposed Migration Management Alternative

1. On the basis of its RI/FS, EPA has elected to approach the contamination attributed to the site activities of SMS Instruments, Inc. by instituting controls based partially upon migration management. To accomplish this goal, EPA proposes to design, install, operate and monitor a groundwater extraction, treatment and re-injection system, "Alternative 2b" of the numerous remedial alternatives scoped for the site.

2. An extraction well located offsite will purportedly capture the contaminated groundwater plume and convey

the water so obtained to air stripping towers which will reduce the level of contaminants of the influent concentration to levels below selected ARARs. Groundwater obtained in this manner is proposed to be re-injected to soils overlying the upper glacial aquifer through wells located generally at or near the northern perimeter of the facility.

3. SMS Instruments, Inc. respectfully suggests that the implementation of the migration management system currently proposed by EPA will result in a remedy which

a. fails to meet the requirements of, or to consider the decisional elements required to be taken into account under, 42 U.S.C. §9621(b)(1), thereby rendering un-recoverable, pursuant to the limitations on cost recovery imposed upon responses to releases taken by the United States in 42 U.S.C. §9607(a)(4)(A), those costs incurred at the facility;

b. fails to comply with, and is inconsistent with, 42 U.S.C. §9621(d)(1), thereby rendering un-recoverable, pursuant to the limitations on cost recovery imposed upon responses to releases taken by the United States in 42 U.S.C. §9607(a)(4)(A), those costs incurred at the facility;

c. fails to comply with, and is inconsistent with, the decisional factors set forth in 42 U.S.C. §9621(d)(2)(B), thereby rendering un-recoverable, pursuant to the limitations on cost recovery imposed upon responses to releases taken by the United States in 42 U.S.C. §9607(a)(4)(A), those costs incurred at the facility;

d. fails to consider and implement 42 U.S.C. §9621(d)(4)(E), thereby rendering un-recoverable, pursuant to the limitations on cost recovery imposed upon responses to releases taken by the United States in 42 U.S.C. §9607(a)(4)(A), those costs incurred at the facility;

e. fails to consider and implement 42 U.S.C. §9621(d)(4)(F), thereby rendering un-recoverable, pursuant to the limitations on cost recovery imposed upon responses to releases taken by the United States in 42 U.S.C. §9607(a)(4)(A), those costs incurred at the facility; and

f. is inconsistent with the National Contingency Plan, 40 C.F.R. Part 300, thereby rendering un-recoverable, pursuant to the limitations on cost recovery imposed upon responses to releases taken by the United States in 42 U.S.C. §9607(a)(4)(A), those costs incurred at the facility.

4. As part of its migration management plan, EPA has proposed to implement an excessive, inappropriate and unsuitable groundwater pumping regime. As a result of EPA's error in calculating groundwater pumping quantities appropriate to the

cleanup goals which EPA believes should be attained at the site, the zone of influence which will be developed will capture a total of approximately 900 (NINE HUNDRED) feet of extraneous water lateral to the center line of the modeled plume. Through well borings, EPA has contended that it has confirmed that the extent of the contaminant plume has been accurately modeled. Under the Proposed Remedial Action Plan, however, more water will be drawn from outside the plume than inside the plume. This is clearly improper and will lead to selection and implementation of an inappropriate remedy.

5. EPA's serious error will result in
   a. oversizing of all piping, pumping, and related equipment;
   b. consumption and waste of several times as much electricity as is actually needed to properly cleanse the upper glacial aquifer;
   c. construction, operation, and maintenance of unnecessary air stripping and related residuals collection and disposal equipment for treatment;
   d. construction, operation and maintenance of an inappropriately sized groundwater re-injection system; and
   e. possible entrainment into the treatment regime of unknown glacial contaminants, with attendant potential for exposure of the unconfined Magothy aquifer to contaminants.

6. Calculations indicate that pumping of groundwater removed from the plume at a rate of approximately 180 gpm maximum would capture the plume under ideal conditions, which conditions EPA has apparently assumed to exist in the soils typical of the affected area. By utilizing more than one pumping well, an idea which EPA has considered already with respect to its improperly sized groundwater treatment scheme, even a lower pumping rate could be sufficient to accomplish EPA's stated goals. Calculations and modeling on which SMS Instruments, Inc. basis these comments are attached as Exhibit A, appended hereto and made a part hereof.

7. By pumping at the rate currently projected by EPA and re-injecting water withdrawn at the southern perimeter of the facility boundary, EPA raises the possibility of

a. the excessive re-injection flow disturbing and contaminating the adjacent recharge basin system by driving upgradient pollutants from their currently understood course of flow; and/or

b. creating an unknown hydraulic gradient which may have the potential for driving both upgradient and facility-originated contaminants into the Magothy aquifer.

8. The apparent lack of a confining zone between the upper glacial and Magothy Aquifer in the vicinity of the facility requires that the management of re-injected water containing contaminants above ARAR levels be especially carefully

scrutinized and conservatively managed so that no drinking water supply is subjected to the possibility of cross-contamination. The oversized re-injection system, as presently proposed to be operated, may pose a threat to the Magothy system.

9. SMS Instruments, Inc. takes the position that heavy groundwater iron burdens recognized by EPA in its RI/FS as prevailing in the Long Island upper glacial aquifer generally, and in the geographic region occupied by the SMS Instruments, Inc. facility in particular, will require an infiltration-percolation lagoon to avoid interference with successful re-injection through clogging of well screens. Treatment of iron proposed by EPA will not necessarily eliminate the problem of adequately handling re-injection flows, as was noted during the public hearing on the proposed remedial action plan. The sheer volumes of water involved in the projected pumping regime, when compared to the realistic potential methods of accomplishing re-injection, could render an injection well infeasible.

Comments, Suggestions and Objections With Respect to EPA's Proposed Soil Cleanup Criteria, Action Levels and Application of ARARs

10. EPA has established excessively and unnecessarily restrictive and conservative soil cleanup levels for the SMS Instruments, Inc. facility. EPA's theoretical partitioning coefficients approach for estimating maximum permissible soil concentrations, when reduced to action levels, yield ridiculous results. For example, establishment of a trans-1,2-

dichloroethene action level at 1 ppb is inconsistent with the actual representative detection limit of that contaminant in soils, which, for established GC/MS methodologies, is in the range of 100 ppb. Additionally, the calculations made in the RI/FS are incorrect. Using the method described in the RI/FS to determine soil action levels, soil action levels must be higher than groundwater action levels. The groundwater action level is 5 ppb; the soil action level must be above that.

11. EPA's approach incorrectly assumes that the entire site contaminant loading is situated directly over the water table. EPA's approach furthermore fails to take into consideration natural attenuation, dilution, and biodegradation effects. Calculations performed by EPA in support of the FS failed to consider the effects of infiltrating rainwater in the unsaturated zone. As a result, EPA has incorrectly characterized the actual distribution of soil contaminants with respect to the glacial aquifer. The 1 ppb level established as an action level for trans-1,2-dichloroethene is unachievable, because it is unmeasureable by any precise (i.e., scientifically repeatable with a suitable degree of accuracy) method known to SMS Instruments, Inc..

12. Additionally, EPA has failed to take into consideration the effects of the volatility of each of the VOCs alleged to be present on the facility. A certain loss of the alleged contaminant loading will occur over time as a result of the volatilization process, and such natural loss mechanisms

must be accounted for in evaluating an element of a preferred remedy.

13. Additional dilution of contaminant loadings occurs at such time as contaminants reach groundwater. A point of compliance for purposes of evaluating performance of the selected remedy needs to be established in light of the above-referenced attenuation and loss factors. After that is accomplished, modeling of the movement of pollutants through the unsaturated zone can be performed, and _rational_ (_i.e._, measurable and attainable) soil cleanup criteria can be established.

14. The SMS Instruments, Inc. facility has been acknowledged by EPA to be located in an area of Deer Park which experiences area-wide upper glacial aquifer groundwater volatile organic contamination. The contamination which EPA contends it has documented at the SMS Instruments, Inc. facility is actually attributable to a variety of off-premises release sources. The average upgradient total volatile organic contaminant level is approximately 115 ppb, based upon the results of sampling potable private wells (wells 1-8 as reflected in Table 5-2 of the RI) upgradient of the SMS Instruments, Inc. site.

15. Despite the fact that EPA has documented numerous sources of upper glacial aquifer contamination _upgradient_ to SMS Instruments, Inc., EPA has, to date, chosen to consider SMS Instruments, Inc. as _a single PRP site_. If EPA persists in maintaining this position as a matter of enforcement strategy, financial resources which owners or operators of _other_

contaminant sources may be able to bring to bear on implementation of a remedy will not be tapped in the course of addressing attainment of ARARs as applied to the release allegedly occurring from within the SMS Instruments, Inc. property boundaries.

16. Accordingly, the upgradient contamination which has been detected and which is a not insignificant contributing source to the total in-ground pollutants alleged to exist at the SMS Instruments, Inc. site should be appropriately reflected in all final action levels applied to, and expected to be attained by, a remedy implemented at the SMS Instruments, Inc. site.

17. While Table 10-2 of the FS reflects an action level for trichloroethene of 14 ppb representative of detected offsite upgradient background levels, other contaminants of interest, such as trans-1,2-dichloroethene, are not similarly compensated for. Trans-1,2-dichloroethene should have been reflected at no less than 35 ppb under a more reasonable approach, as applied to a sole PRP whose site is receiving more than negligible contamination from upgradient sources.

18. SMS Instruments, Inc. objects to the action levels currently expressed in the FS and suggests adoption of a total volatile organics action level equal to 100 ppb. Existing pollutant sources independent of SMS Instruments, Inc. have rendered the upper glacial aquifer unsuitable as a source of potable water. Application of SMS Instruments, Inc.'s recommendation of a total volatile organic level of 100 ppb will, at

the same time (a) establish a fair burden on the sole area PRP from which EPA will be demanding cleanup of an aquifer admittedly polluted by other entities and (b) also assure full protection of the public health, welfare and the environment, including prevention of further degradation of the upper glacial aquifer and prevention of any intrusion into the Magothy aquifer.

19. Furthermore, if a 100 ppb total volatile organic constituent goal is selected, it may be possible to capture the relevant plume with a pump and treat system downscaled to a pumping rate of 100 gpm, capturing a plume approximately 150 feet wide. Both re-injection costs and technical re-injection hurdles stemming from residual groundwater iron will be reduced. Only a single stripping tower will be needed. Fewer final irreducible wastes requiring ultimate disposal will be created. Cleanup time will be reduced significantly. Dispersion effects will decrease the concentration of the plume over a relatively short distance. No incremental degradation of the upper glacial aquifer will result as compared to the selected remedial alternative resulting from the present FS. No impact on the Magothy Aquifer at a level exceeding a maximum contaminant level (MCL) for drinking water is projected from such a re-scaling of the groundwater treatment system, but costs and system complexity would be markedly reduced.

20. Xylene is a non-carcinogenic volatile organic constituent of the in-ground pollutant loadings which EPA claims to have detected at the SMS Instruments, Inc. facility. The

5 ppb action level selected for this constituent is based upon a New York State standard. Considering health-based criteria, however, an appropriate level for xylene in drinking water would be 44 ppb. Forty-four parts per billion xylene is the health-based level established by the State of New Jersey, for example. If the basis for establishment of the action level for xylene is claimed to be related to potential for migration of that constituent to the Magothy Aquifer, or to human health effects, then selection of a more stringent criterion, as presently is the case, is unwarranted.

21. The upper glacial aquifer has been established by the RI to be unused as a potable water source. Its natural properties, exclusive of any pollutant loadings, render the upper glacial aquifer unusable as a potable water source. The TDS maximum in an upgradient offsite well were at 3980 ppm, rendering the source non-potable. The process of establishment of levels of residual contaminants resulting from implementation of a groundwater cleansing program in the vicinity of the SMS Instruments, Inc. site should accomplish two goals: first, it should be protective of the Magothy Aquifer; second, it should be protective of any surface waters to which discharge of the upper glacial aquifer may occur. Both these goals may be met with less stringent contaminant action levels, while at the same time lowering the cost of performing the projected remedial option and increasing the probability that costs incurred by the United States meet the legal requirements for recoverability.

22. As EPA readily admits, the preferred EPA soil remedial alternative for the SMS Instruments, Inc. site is not a proven technology. Time estimates for completion are impossible to calculate at the present time. O&M costs of such a system are relatively high. The system may not be capable of attaining the unusually low (and, SMS Instruments, Inc. contends, improperly imposed) soil remediation criteria established by the FS. An incremental cost factor equal to the projected cost of the vapor extraction O&M, without addition of steam, should have been added to the project cost and considered when comparing the screened alternatives to accommodate the cost factor of unknown efficacy of the proposed alternative.

Comments, Suggestions and Objections With Respect to EPA's Projected Time Frame for Accomplishing Remedial Goals at the SMS Instruments, Inc. Superfund Site

23. EPA has established an unrealistic projection of the time required to accomplish the remedial objective through the proposed alternative selection. As a result, EPA has compared and ranked remedial alternatives under a set of false premises related to cost-effectiveness. Re-assessment of actual costs and projected effects on the resource desired to be protected, the Magothy Aquifer, could result in selection of a lower cost option as the proposed remedial alternative.

24. That EPA has misjudged the effect of operation of the proposed system is easy to see. A total area-wide volume calculation of the trans-1,2-dichloroethene plume shows that the

capture area of the proposed groundwater control well system is 64 million cubic feet. Adjusting for porosity at the porosity assumption used in the RI yields 22.4 million cubic feet of water per pore volume for the trans-1,2-dichloroethene plume. Adjusting the pump rate to 182.25 gpm to allow for capture of the actual plume of contaminants of concern, and dividing the resulting 35,083 ft^3 of daily flow through the system into the volume which the scheme must address for a pore volume yields a pump time of 635 days. Under the retardation factor for trans-1,2-dichloroethene assumed by EPA in its RI, 29% will be in the dissolved phase. Alternatively, 71% will be attenuated in a pore volume. Therefore, it may require up to 17 such pore volumes to reduce a 1,400 ppb plume concentration of trans-1,2-dichloroethene to the selected ARAR for that constituent. Multiplying the two quantities, it is seen that it could take 29.5 years to accomplish this goal in a reasonably designed system sized to the actual plume conditions.

25. Furthermore, EPA's own research into pump and treat remedies has revealed that such technologies often take substantially longer to accomplish than is revealed by calculations.

26. If the O&M costs of such a system are recalculated and the time consumed in completing the goals under the selected alternative is compared to the upper glacial aquifer cleansing accomplished with the no action alternative (Alternatives 1a, 3), it is clear that before the Regional Administrator can be in a

position to select a factually-based remedy for the SMS Instruments, Inc. site, the remedial options must be re-appraised to determine whether another option, such as the no action alternative, is equally suitable or even preferential to the currently proposed remedy for dealing with the pollutant situation which EPA believes to be present at the site.

CONCLUSION

EPA must take into account two major factors prior to finalizing the RI/FS and entering the ROD stage. First, the area-wide groundwater contamination problem must be fully integrated into any choice of remedial alternatives. Clearly, what we are dealing with here -- the upper glacial aquifer -- is not a potable water aquifer, due to naturally high TDS levels and off-site anthropogenic sources. Setting groundwater and soil cleanup criteria to be at or below existing background water quality and health-based drinking water standards is neither cost-effective, realistic or attainable. Pursuing such a course will result only in unnecessary expense, while at the same time creating false and unjustified expectations in the public.

SMS Instruments, Inc.'s second concern is that the FS has several major important technical errors. These include incorrect soil action levels as well as incorrect pumping rate design for plume remediation. This, along with the formerly mentioned FS errors, will result in the expenditures of large sums for unattainable results.

SMS Instruments, Inc. respectfully requests that the Regional Administrator consider the comments, suggestions and objections set forth herein, and that appropriate reconsideration be given to, and re-evaluation made with respect to, the proposed remedial action prior to the Regional Administrator's selection of a remedial action and its embodiment in a Record of Decision for the SMS Instruments, Inc. site.

Respectfully submitted,

DATED: August 11, 1989

Henry Gluckstern

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New York, New York 10017
212-687-8181

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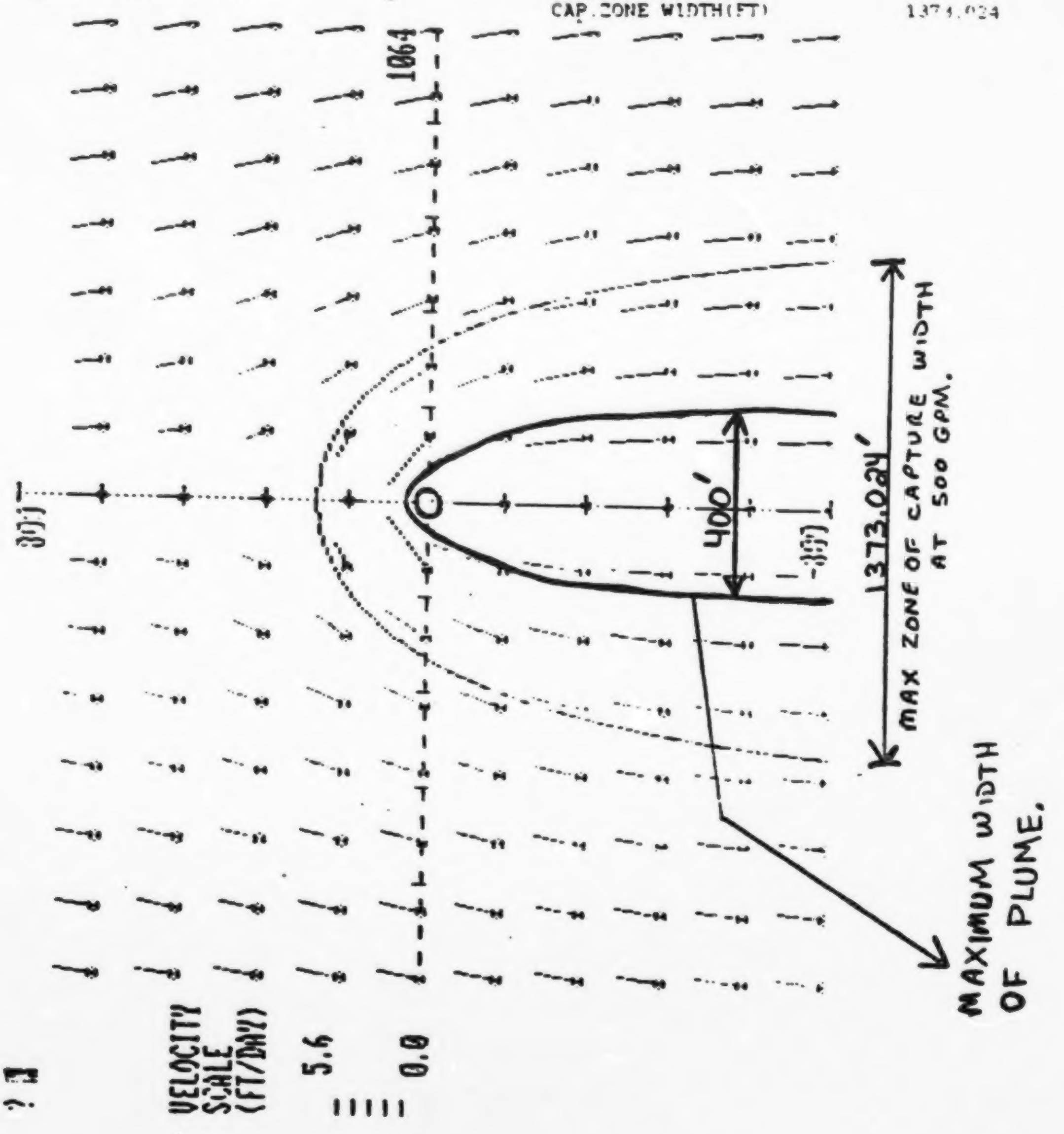

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best available copy.

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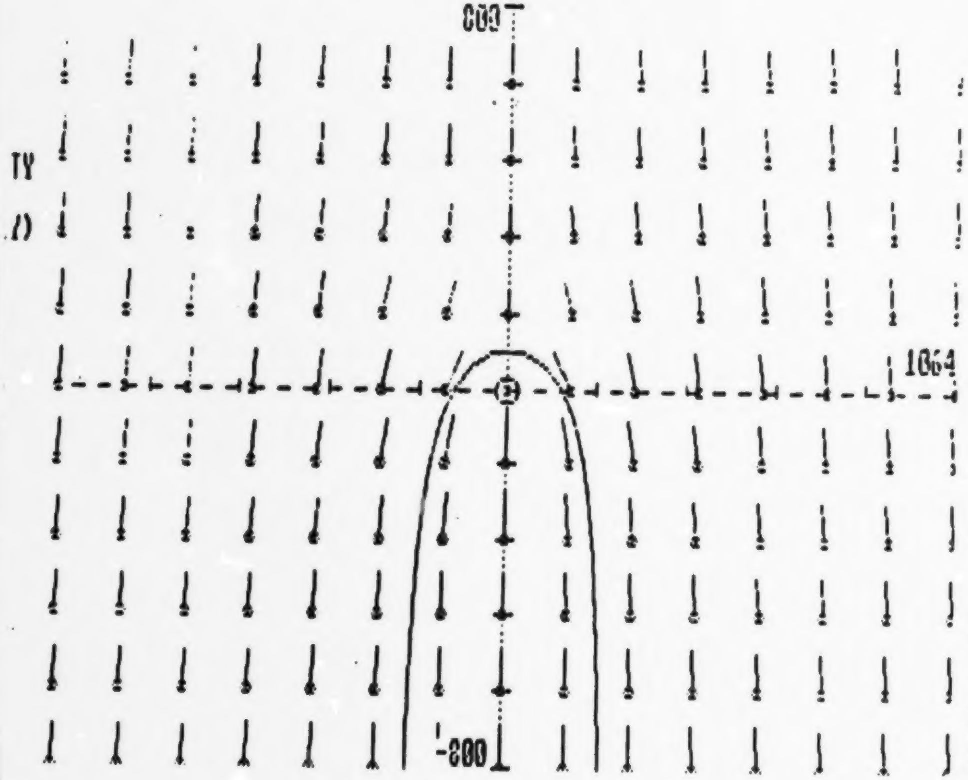

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MAXIMUM UPGRADIENT
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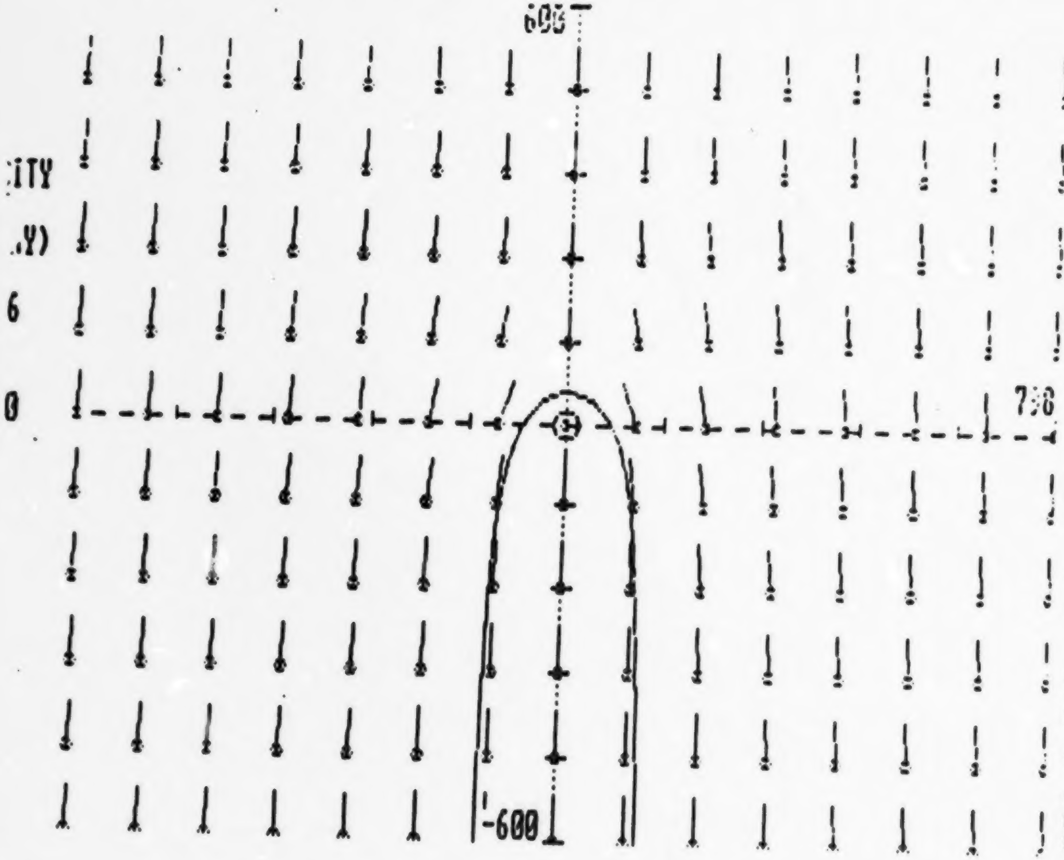

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September 5, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Elena Kissel, Esq.
Assistant Regional Counsel
United States Environmental Protection Agency
26 Federal Plaza
New York, New York 10278

Re: S.M.S. Instruments, Inc. Uncontrolled
Hazardous Substance Facility

Dear Ms. Kissel:

Enclosed please find an addendum to SMS Instruments, Inc.'s comments on the EPA's RI/FS and Proposed Remedial Action. This late comment is submitted based upon information just brought to SMS' attention through a consultant. Although it is submitted out of time with respect to the closing date for comments on the substantive matter of remedy selection, since it does not directly affect the remedy issue in the same manner as SMS Instruments, Inc.'s August 11, 1989 comments, I believe that EPA will not be prejudiced if it gives the comment full consideration. My client, however, will be greatly prejudiced if today's comment is not taken into consideration before EPA proceeds to demand implementation of a remedy at the site from identified PRPs.

Sincerely yours,

KREINDLER & KREINDLER

By: Henry Gluckstern

Enclosure

HG:mm